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American Railroad Journal.

Saturday, July 17, 1852.

Dividends of New Works.

We regret to see a very strong disposition on the part of the managers of some roads that have recently gone into operation, to make an extraordinary show of dividends. We think it always an incorrect policy to declare large dividends from the *first* earnings of roads, for the reason that it is impossible, till after a considerable period, frequently years, have elapsed, to ascertain correctly the actual amount of dividend earned. A road is always opened before it is *finished*, and if it be doing well apparently, it is much the most prudent and correct way of doing things, to declare such a dividend as shall make the stock a good investment, and lay aside any balance for contingencies, which are sure to occur. Stockholders are just as well off with a *renewal* fund to be divided at a future day, if not needed for construction, as they would be with the amount in their own pockets. Should further expenditure be required, it is much better all round, that the surplus never be paid into the pockets of stockholders, to be refunded again at a future day. Such an operation must always result

in a loss, besides causing frequently great inconvenience to the parties called upon.

One of the evil effects of excessive dividends is, their tendency toward an undue inflation of the stock upon which they are declared. They beget, too, a habit of extravagance in the expenditures upon, and management of, a road. This was well illustrated a few years since, by the results that followed the eight and ten per cent dividends, declared upon some of the leading Massachusetts roads. Their stocks in consequence went up to some 20 per cent above par. This apparent prosperity led to very large expenditures of all kinds, that were not really needed. A year or two disclosed the fact, that these rates could not be maintained. The companies were compelled to fall back to six and seven per cent dividends, and their stock fell from 120 to par, or below it. The causes of the inflation were fictitious. The excess of dividend over the ordinary rate, proved to have been taken from construction and running accounts. The fund applicable to these accounts, was not only encroached upon, but the accounts themselves immensely increased. Large sums were lost by those who purchased at the top of the market; and the whole result was injurious every way.

What was true of the Massachusetts roads will be found true everywhere. Seven per cent is a high rate of interest, in the long run, in Massachusetts. The average net receipts of her roads cannot for a series of years, (except in isolated cases) much, if any, exceed the ordinary rates of interest prevailing in the community where they are located. The rates of interest on capital regulate themselves. Large dividends invite the competition of rival lines, and stimulate the construction of new works, which are certain to bring down the profits to the ordinary level of returns upon other kinds of permanent investment. This is a natural law. Railroad companies, therefore, must not expect in the long run, to receive a better interest on their money, than they would from an equal amount invested in bond and mortgage, in state or city securities or bank stock. Whenever a particular kind of investment pays largely, capital is sure to flow in that direction. The supply offering brings down the rates to the prevailing level of other investments.

In the west, we are willing to admit that ten per cent per annum would not be an excessive divi-

dend for the present time, nor probably for many years to come. At the rates of fare charged in the east, western roads could earn this amount, and be able to reserve a sufficient surplus. This rate does not, nor will it, exceed the rate of interest charged for money in the new States for a long time to come. Other kinds of investments yield an equal return. Ten per cent dividend in railroad stock will not provoke rivalry, nor tend to promote speculative projects. As in the east, so in the west, the condition of things peculiar to each section must be taken into consideration. A ten per cent dividend on a western road, will not carry their stock higher than will seven per cent, eastern roads. The former, from their distance from us, and from the risk attached to their management, cannot expect to command at present the same relative price as our tried eastern projects. There is little fear that, at present, the above rate will lead to speculation, or to unwise movements and extravagant expenditures. But as roads multiply in the west, the rates of dividend will gradually fall there. In view of this, we have placed ten per cent as the safe *maximum* limit. But we are sorry to see companies, by no means content with the *paltry* rate. They talk of fifteen and twenty per cent annually, as an easy matter, and promise to pay it in *their* roads. In such cases we are constrained to believe that other motives than the real good of the investment lies at the bottom of such promises. The object is to inflate the stock, for the sake of making money upon the rise. It comes about in this way. A company of shrewd operators buy upon an old road, or build a new one, and will either take in pay, or divide among themselves, a very large bonus in stock. This stock costs the first holders little or *nothing*. All they can sell at par is clear gain. They all join hands to put it up upon the market. Every system of puffing is resorted to. But the most efficient means is to declare extravagant dividends. To do this, money is taken belonging both to the running and construction accounts. The road is left in an unfinished state. Shanties are used for depots. Everything, in fact must give way to *dividend*. The original parties clear themselves of their stock, during the period in which these expedients can be resorted to, to keep up appearances, and then leave the concern to take care of itself. Gradually the truth comes to light. A new loan must be resorted to, or future

earnings applied, for the completion of the road, or to replace the sums improperly paid out in dividends.

We do not apply these charges to any particular work; but indications seem to justify the belief, that what we have said will in time prove true of some projects conspicuously before the public. We speak by way of caution. Do not let us soil a good thing. Our roads are doing well enough. Those in the west can, on an average, earn and divide ten per cent per annum. This is sufficient, in all reason, to satisfy any body; and what they can do above this should be remitted, in the shape of reduced charges, for the benefit of the public that support them. Let us not pitch our tune too high, nor hallo "till we get out of the woods." Ten per cent will do to start with. If we can earn more the balance can be very conveniently laid aside for a wet day.

For the American Railroad Journal.
City Railroads and Pavements.

MR. EDITOR: There will soon be three or four railroads at work in the streets of this city, and several more are projected, for the transit of city passengers, in addition to the two roads which extend beyond the Island of Manhattan. Although these roads are not of so much interest to your readers as country roads, a brief comment upon them may not be entirely out of place.

The railroads laid down in this city are so constructed that common vehicles can cross them without inconvenience. Their surface is flush with the pavement; and the rail has a groove for the flange to run in. This groove will generally be filled with mud and dirt, which will add greatly to the resistance; how much I cannot state, as no experiments have been recorded that I hear of. But on a smooth pavement, the increase of resistance caused by mud is more than 30 per cent of the power required upon a clean pavement. Mere dust also causes a considerable resistance. Morin (*vide Memoire Mecanique*, page 337) states the resistance to a diligence, at a walk, on a dry pavement, at one-fifty seventh; on a muddy pavement, one-forty fourth. These resistances are about 54 and 39 lbs. per ton; and the difference is 15 lbs. Now the resistance upon rails, at a slow movement is 8, and sometimes $7\frac{1}{2}$ lbs. per ton. In muddy weather the grooves will be constantly filled, and the compression and displacement will probably be greater than it is upon the surface; and were the vehicles of the same weight, it appears that the grooves might cause the resistance to be about thrice what it is upon common rails. At all times there will be more or less dirt, mixed with more or less water, and a serious waste of power will be incurred. I shall now consider another form of iron road, which I think will be superior to the one already in use, for streets.

Cast iron pavements have been tried in England at different times during the past 25 years. They were given up because horses slipped upon them. They are now again under trial in Glasgow, with an improved grooving, which is said to afford a firm foot hold. Mr. Roosevelt of this city has proposed a plan in which he adopts the Glasgow grooving for the horse tracks, and smooth wheel tracks; and he makes holes clear through the plates, in the grooves, so that the dirt and water may pass through, and be conducted to the sewer, through which, as experience has shown, it will readily be carried to the sea. The surface of this pavement would always be free from mud, and

very little dust would remain upon it; the resistance of the wheel tracks would be less than that of rails, because the flange and its lateral friction would be avoided; moreover, the wheels would be twice the size of car wheels, and therefore, according to Morin, the resistance would be but one-half. Considering this advantage of large wheels, and the freedom from mud and dust, it is not improbable that the average resistance of the flat and clean iron surface would be less than a third of the resistance to cars upon rails of this form, in the condition they would be in when the pavements are of stone, and the cleaning such as we have at present—which condition, be it observed, cannot be much improved without an expense greater than would be required to pave with iron.

I have thus far considered these roads in relation to horse power. But this power, for all vehicles to carry twenty passengers or more, even at the moderate speed allowable in streets, is at least twice as expensive as steam. Therefore take the ground that horses must be banished from the streets, as unnecessary, expensive and offensive on account of their dirt, and the excessive wear and tear they make upon the pavements. Steam is the known and well tried power which can be substituted for them; or rather, it is a power, which, if properly applied, will be economical and perfectly inoffensive, and for which animal power is a substitute during the infancy of civilization. Perhaps compressed air, or some other more convenient though more costly agent, may by and bye be used; but that is uncertain—steam is sure and good, and will lead to whatever other elementary power may be on the whole better for the purpose.

Substituting steam, and excluding horses, we have advantages both to the railroad and the iron pavement. The former will be relieved from the resistance of dirt, and its traction reduced to eight lbs. per ton; and the latter will be relieved from its grooves, and become everywhere as flat and smooth as good work can make it, at a reasonable expense. I take it, that it will be formed of iron planks, bolted together into platforms, and laid lengthwise, and that its surface would be fully equal to that of rails. The wheels being larger and without flanges, I take it that the traction would be in the inverse ratio of the diameter of the wheels. But the great advantage will be, that a street of given width will accommodate more traffic upon a flat surface than it can upon rails. It is necessary for *accommodation*, to stop whenever one passenger wishes to mount or dismount; and therefore the vehicle must be of such moderate size that not too many persons or too bulky a vehicle shall be detained for the accommodation of one. If twenty be the maximum load, then twelve will be the average load, and a greater number would not wish to stop for one; and the stoppage of a larger vehicle would be an undue incumbrance of the street.

The railroad of course is better adapted for long routes. A train of three hundred passengers, stopping at stations ten miles apart, is not inconvenient, and it economises machinery and labor, and therefore makes it economical for passengers. But city vehicles must stop everywhere, at all times; and they must be small, or they will incumber each other, or fail to accommodate the public. Now the number of men required to work steam omnibuses upon pavements will be the same as are required to work upon rails—one man to each vehicle; and the cost of the vehicles will be about the same. The advantage in favor of the omnibus will be, that its steering apparatus will enable it to

go wherever required, and stop without stopping others.

The cost of laying a railway is about equal to paving the same breadth with cast iron laid upon concrete. The durability is about the same for the iron—it will last from 20 to 120 years or more, according to the traffic; but the woodwork of the railroad will last but 12 years, or if wood is not used, then a greater first cost must be incurred. About \$128 per mile per year must be expended upon the sleepers of a double track. The balance would therefore be in favor of the pavement, even if the railway were of the ordinary kind. But there must be a pavement in addition to the rails; and the two will cost double.

The whole cost of street cleaning will be saved by the adoption of iron pavements, except when snow is to be removed; no dust will be made upon it. If, from the vulgar habits of a few, whom the inefficient police do not restrain, some dirt be thrown or dropped upon it, the removal of that will not be legitimately chargeable to the pavement or the traffic; and there is no difficulty in repressing such nuisances—they are repressed in all well-governed cities—and the vast damage to clothing, furniture and goods will be saved, and the wear of vehicles will be lessened.

I have not alluded to the grades. Neither the railway nor the iron pavement can operate with full advantage unless the grades are improved to correspond with the improved surface. Upon a common road, an inclination of one in twenty can be ascended by horses with the loads which they can draw at a quick trot upon a level; but upon a railroad a grade of one in a hundred could not be ascended with the load that would be drawn at a trot upon a level. Hence, if the grade is bad, the motive power must be in excess, and cannot work with economy.

In Broadway the steepest grade is about 1 in 34. In Greenwich street and the Eighth and Ninth avenues there are no grades that may not without inconvenience be reduced so that the power might be applied with tolerable economy. And this street, though narrow, with an iron pavement, would accommodate more traffic than Broadway could with all the rails that could be laid in it; and steam power could work upon it with convenience.

The room occupied by steam power upon the road would be about the same in all cases; if a cheap omnibus, carrying outside passengers, upon the top, were run, it would occupy no more room than one which carried only inside passengers, and yet it would carry twice the number. But if more horse power be added, more room will be occupied. All the room occupied by the machinery of an omnibus would accommodate only four passengers, whether it be a large or small one, and carry 12 or 50; but the team of such an omnibus for a stone pavement would occupy near forty feet in length, instead of three; and on an iron pavement it would occupy ten feet or more. This is a consideration which is becoming of importance as the streets become more and more thronged.

J. K. F.

Cincinnati and Marietta Railroad.

A large lot of iron, designed for the Marietta and Cincinnati railroad, arrived in our city last week. It will be placed on the track, beginning on the northwestern border of this city and running westward, to facilitate the work of embankment and excavation including the Island running beyond Purcell's summit. On the completion of the road from Wheeling and Belpre to Cincinnati, in 1854, it is the purpose of the company to use throughout the "compound rail," 75 lbs to the yard—8000 tons

of which have already been purchased.—*Scioto Gazette.*

General Railroad Law of Ohio Under the New Constitution.

Sec. 1. Be it enacted by the General Assembly of the State of Ohio, That any number of natural persons, not less than five, may become a body corporate, with all the rights, privileges and powers conferred by, and subject to all the restrictions of this act.

TO CREATE AND REGULATE RAILROAD COMPANIES.

Sec. 2. That any number of persons as aforesaid, associating, to form a company for the purpose of constructing a railroad, shall under their hands and seals, make a certificate, which shall specify as follows:—

1st. The name assumed by such company, and by which it shall be known. 2nd. The name of the place of the termini of said road, and the county or counties through which such road shall pass.—3d. The amount of capital stock necessary to construct such road. Such certificate shall be acknowledged before a justice of the peace, and certified by the clerk of the court of common pleas, and shall be forwarded to the Secretary of State, who shall record and carefully preserve the same in his office; and a copy thereof, duly certified by the Secretary of State, under the great seal of the State of Ohio, shall be evidence of the existence of such company.

Sec. 3. That when the foregoing provisions have been complied with, the persons named as corporators in said certificate, are hereby authorized to carry into effect the objects named in said certificate, in accordance with the provisions of this act; and they and their associates, successors and assigns, by the name and style provided in said certificate, shall thereafter be deemed a body corporate, with succession, with power to sue and be sued, plead and be impleaded, defend and be defended, contract and be contracted with, acquire and convey, at pleasure, all such real and personal estate as may be necessary and convenient to carry into effect the objects of the incorporation, to make and use a common seal, and the same to alter at pleasure, and do all needful acts to carry into effect the object for which it was created; and such company shall possess all the powers, and be subject to all rules and restrictions provided by this act.

Sec. 4. Said corporations shall be authorized to construct and maintain a railroad, with a single or double track, with such side-tracks, turn-outs, offices and depots, as they may deem necessary, between the points named in the certificate, commencing at or within and extending to or into any town, city or village, named as the place of the termini of such road, and construct branches from the main line to other towns or places within the limits of any county through which said road may pass.

Sec. 5. The capital stock of such company shall be divided into shares of fifty dollars each, and consist of such sum as may be named in the certificate; such shares shall be regarded as personal property, and shall be subject to execution at law.

Sec. 6. An instalment of five dollars on each share of stock, shall be payable at the time of making the subscription, and the residue thereof shall be paid in such instalments, and at such times and places, and to such person, as may be required by the directors of such company.

Sec. 7. If any instalment of stock shall remain unpaid for sixty days after the time it may be required, whether such stock is held by an assignee, transferred, or the original subscriber, the same may be collected by action of debt, or the directors may sell the stock so unpaid at public auction, for the instalment then due thereon; first giving thirty days public notice of the time and place of sale in some newspaper in general circulation in the country where such delinquent stockholder resided at the time of making such subscription, or becoming such assignee or transferee, or of his actual residence at the time of said sale; or, if such stockholder resided out of the state, such publication shall be made in the county where the principal office of the company is located; and if any residue of money shall remain, after paying the amount due on said stock, the same shall, on demand, be paid over to the owner; if the whole of said instalment

be not paid by such sale, the remainder shall be recoverable by an action of debt against the subscriber, assignee or transferee.

Sec. 8. That whenever any railroad company, heretofore incorporated, or created and incorporated under the provisions of this act, shall, in the opinion of the directors thereof, require an increased amount of capital stock, they shall, if authorized by the holders of a majority of the stock, file with the auditor of state a certificate, setting forth the amount of such desired increase, and thereafter such company shall be entitled to have such increased capital, as is fixed by said certificate.

Sec. 9. That the persons named in said certificate of incorporation, or any three of them, shall be authorized to order books to be opened for receiving subscriptions to the capital stock of said company, at such time or times, and at such place or places, as they may deem expedient, after having given at least thirty day's notice, in a newspaper published or generally circulated in one or more counties where books of subscription are to be opened, of the time and place of opening books; and so soon as ten per centum on the capital stock shall be subscribed, they may give like notice for the stockholders to meet at such time and place as they may designate, for the purpose of choosing seven directors, who shall continue in office until the time fixed for the annual election, and until their successors are chosen and qualified; at the time and place appointed, directors shall be chosen, by ballot, by such of the stockholders as shall attend for that purpose, either in person or by lawful proxies; each share shall entitle the owner to one vote, and a plurality of votes shall be necessary for a choice; but after the first election of directors, no person shall vote on any share (on) which any instalment is due and unpaid. The persons named in such certificate, or such of them as may be present, shall be inspectors of such election, and shall certify what persons are elected directors, and appoint the time and place for holding their first meeting; a majority of said directors shall form a board, and be competent to fill vacancies in their board, make by-laws, and transact all business of the corporation; a new election shall be annually held for directors, at such time and place as the stockholders, at their first meeting, shall determine, or as the by-laws of the corporation may require; and the directors chosen at any election, shall, so soon thereafter as may be convenient, choose any one of their number to be president, and shall appoint a secretary and treasurer of the corporation. The directors, before entering on their duties, shall each take an oath, or affirmation, faithfully to discharge his duties, and they shall, from time to time, make such dividends of the profits of said company, as they may think proper.

Sec. 10. Such corporation is authorized to enter upon any land, for the purpose of examining and surveying its railroad line, and may appropriate so much thereof as may be deemed necessary for its railroad, including necessary side-tracks, depots and workshops, and water stations, materials for construction, except timber, a right of way over adjacent lands, sufficient to enable said company to construct and repair its road, and a right to conduct water by aqueducts, and the right of making proper drains; but no appropriation of private property to the use of any corporation provided for in this act, shall be made, until full compensation therefor be first made, in money, or first secured by deposit of money, to the owners or owners, irrespective of any benefit from any improvement proposed by such corporation, as shall be prescribed by law.

Sec. 11. That whenever any railroad company heretofore incorporated, or which may hereafter be incorporated, shall find it necessary, for the purpose of avoiding annoyance to public travel, or dangerous or difficult curves or grades, or unsafe or unsubstantial grounds or foundations, or for other reasonable causes, to change the location or grade of any portion of their road, whether heretofore or hereafter to be made, such railroad companies shall be and are hereby authorized to make such changes of grade and location, not departing from the general route prescribed in the certificate of such company; and for the purpose of making any such change in the location and grades of any such road, as aforesaid, such company shall have all the rights, powers and privileges, to enter upon and take and

appropriate such lands, and make surveys necessary to effect such changes and grades, upon the same terms, and be subject to the same obligations, rules and regulations, as are prescribed by law, and shall also be liable, in damages, when any have been caused by such change, to the owner or owners of the lands upon which such road was heretofore constructed, to be ascertained and paid or deposited as aforesaid; but no damages shall be allowed, unless claimed within thirty days after actual notice of such intended change, shall be given to such owner or owners, if residing on the premises, or notice by publication in some newspaper in general circulation in the county, if non-resident.

Sec. 12. If it shall be necessary, in the location of any part of any railroad, to occupy any road, street, alley, or public way, or ground of any kind, or any part thereof, it shall be competent for the municipal or other corporation or public officer, or public authorities, owning or having charge thereof, and the railroad company, to agree upon the manner and upon the terms and conditions upon which the same may be used and occupied; and if said parties shall be unable to agree thereon, and it shall be necessary, in the judgment of the directors, of such railroad company, to use or occupy such road, street, alley or other public way or ground, such company may appropriate so much of the same as may be necessary for the purposes of such road, in the same manner, and upon the same terms, as is provided for the appropriation of the property of individuals, by the 10th section of this act.

Sec. 13. Such corporation may demand and receive for the transportation of passengers on said road, not exceeding three cents per mile, and for the transportation of property, not exceeding five cents per ton per mile, when the same is transported a distance of thirty miles or more; and in case the same is transported for a distance less than thirty miles, such reasonable rate as may be from time to time fixed by said company, or prescribed by law.

Sec. 14. Such company shall have power to borrow money on the credit of the corporation, not exceeding its authorized capital stock, at a rate of interest not exceeding seven per cent per annum, and may execute bonds or promissory notes therefor, in sums of not less than one hundred dollars; and to secure the payment thereof, may pledge the property and income of such company.

Sec. 15. Such company may acquire by purchase or gift, any lands in the vicinity of said road or through which the same may pass, so far as may be deemed necessary or convenient by said company to secure the right of way, or such as may be granted to aid in the construction of such road, and the same to hold or convey in such manner as the directors may prescribe; and all deeds and conveyances made by such company, shall be signed by the president, under seal of the corporation; and any existing railroad corporation may accept the provisions of this act, and after such acceptance, all conflicting provisions of their respective charters shall be null and void.

Sec. 16. It shall be lawful for such corporation whenever it shall be deemed necessary, in the construction of such road, to cross any road or stream of water to divert the same from its present location or bed; but said corporation shall without unnecessary delay, place such road or stream in such condition as not to impair its former usefulness.

Sec. 17. Such corporation shall, as soon as convenient after its organization, establish a principal office at some point on the line of its road, and change the same at pleasure, giving public notice in some newspaper of such establishment or change.

Sec. 18. Every company organized under this act, shall be required to erect, at all points where their road shall cross any public road at a sufficient elevation from such road to admit of the free passage of vehicles of every kind, a sign with a large and distinct letters placed thereon, to give notice of the proximity of the railroad, and warn persons of the necessity of looking out for the cars; and any company neglecting or refusing to erect such sign, shall be liable in damages for all injuries occurring to persons or property from such neglect or refusal; and each railroad company shall be required to fence its roads, with a good substantial wooden fence, under such rules as the county

commissioners of the several counties through which the same may pass, shall prescribe.

Sec. 19. That each and every railroad company, incorporated under this act shall annually in the month of January, make a full report of the condition of its affairs, to the Auditor of state, showing the amount of capital stock of such company, the gross amount of tolls or receipts during the previous year, the costs of repairs and incidental expenses, the net amount of profits, and the dividends made; with such other facts as may be necessary to a full statement of the affairs and conditions of such road; and the Auditor shall annually present an abstract copy of such report to the general assembly.

Sec. 20. That whenever the line of any railroad company now existing, or which may hereafter organize under this act, shall cross any canal, or any navigable water, the said company shall file with the "board of public works," or with the acting commissioners thereof, having charge of the public works where such crossing is proposed, the plan of the bridge, and other fixtures for crossing such canal or navigable water, designating the place of crossing; and if the said board or acting commissioner thereof, shall approve of such plan, he shall notify such company, in writing of such approval; but if the said board or acting commissioner, shall disapprove such plan, or fail to approve the same within twenty days from the filing thereof, then it shall be lawful for such company to apply to the court of common pleas, or any judge thereof in vacation, and upon reasonable notice being given to the board of public works, or said acting commissioner, said court or judge shall, upon good cause shown, appoint a competent disinterested engineer, not a resident of any country through which said road passes, to examine such crossing, and prescribe the plan and condition thereof, so as not to impede navigation; and such engineer shall, within twenty days from his appointment, make his return to the court of common pleas of the county where such crossing is to be made subject to exceptions by either party, and thereupon the court shall at the next term after the filing of said return proceed to examine the same, and unless good cause is shown, shall approve and confirm the same; and such order or confirmation shall be sufficient authority, for the erection use and occupancy of such bridge, in accordance with such plan; provided, that no railroad company shall be authorized to construct a permanent bridge over any canal of this state which shall be less than ten feet in the clear above the top water line of said canal; and the piers and abutments of such bridge shall be placed so as not in any manner to contract the width of the canal, or interfere with free passage on the towing path.

Sec. 21. That whenever the lines of railroad of any railroad companies, in this state or any portion of such lines, have been or may be constructed, so as to admit the passage of burden or passenger cars over two or more of such roads continuously without break or interruption, such companies are hereby authorized to consolidate themselves into a single corporation, in the manner following:

L The directors of said two or more corporations may enter into an agreement, under the corporate seal of each, for the consolidation of the said two or more corporations, prescribing the terms and conditions thereof; the mode of carrying the same into effect; the name of the new corporation; the number of the directors thereof, which shall not exceed thirteen; the time and place of holding the first election for directors; and the number of shares of capital stock in the new corporation; the amount of each share; the manner of converting the shares of capital stock in each of said two or more corporations into shares in such new corporation; the manner of compensating stockholders in each of said two or more corporations who refuse to convert their stock into the stock of such new corporation; with such other details as they shall deem necessary to perfect such consolidation of said corporations; and such new corporation shall possess all the powers, rights and franchises, conferred upon such two or more corporations, and shall be subject [to] all the restrictions, and perform all the duties, imposed by the provisions of this act; provided, that all stockholders in either of such corporations who will refuse to convert their stock into the

stock of such new corporation, shall be paid at least par value for each of the shares so held by them, if they shall so require, previous to said consolidation being consummated.

II. Such agreement of the directors shall not be deemed to be the agreement of the said two or more corporations, until after it has been submitted to the stockholders of each of said corporations, separately, at a meeting thereof; to be called upon a notice of at least thirty days; specifying the time and place of such meeting, and the object thereof, to be addressed to each of such stockholders, when their place of residence is known, and deposited in the postoffice, and published for at least three successive weeks in one newspaper in at least one of the cities or towns in which each of said corporation has its principal office of business, and has been sanctioned by such stockholders, by a vote of at least two thirds in amount of the stockholders present at such meeting, voting by ballot, in regard to such agreement, either in person or by proxy, each share being entitled to one vote; and when such agreement of the directors has been so sanctioned by each of the meetings of the stockholders separately, after being submitted to such meetings in the manner above mentioned, then such agreement of the directors shall be deemed to be the agreement of the said two or more corporations.

Sec. 22. Upon making the agreement mentioned in the preceding section, in the manner required therein, and filing a duplicate or counterpart thereof in the office of the Secretary of State, the said two or more corporations mentioned or referred to in the said first section, shall be merged in the new corporation provided for in such agreement, to be known by the corporate name therein mentioned, and the details of such agreement shall be carried into effect, as provided therein.

Sec. 23. Upon the election of the first board of directors of the corporation created by the agreement in the twenty-first section of this act mentioned, and by the provisions of this act, all and singular the rights and franchises of each and all of said two or more corporations, parties to such agreement, all and singular their rights and interests, in and to every species of property, real, personal and mixed, and things in action shall be deemed to be transferred to and vested in such new corporation, without any other deed or transfer; and such new corporation shall hold and enjoy the same, together with the right of way, and all other rights of property, in the same manner, and to the same extent, as if the said two or more corporations, parties to such agreement, should have continued to retain the title, and transact the business of such corporations; and the titles and the real estate acquired by either of said two or more corporations, shall not be deemed to revert or be impaired by means of anything in this act contained; Provided that all rights of creditors, and all liens upon the property of either of said corporations, parties to said agreement shall be and hereby are preserved unimpaired; and the respective corporations shall continue to exist so far as may be necessary to enforce the same; and provided further, that all the debts, liabilities and duties of either company shall henceforth attach to such new corporation, and be enforced from the same, to the extent and in the same manner, as if such debts, liabilities and dues, had been originally incurred by it.

Sec. 24. Any railroad company heretofore or hereafter incorporated, may at any time, by means of subscription to the capital of any other company, or otherwise, aid such company in the construction of its railroad, for the purpose of forming a connection of said last mentioned road, with the road owned by the company furnishing said aid; or any railroad company organised in pursuance of law, may lease or purchase any part or all of any railroad constructed by any other company, if said companies' lines of road are contiguous or connected as aforesaid, upon such terms and conditions as may be agreed on between said companies respectively; or any two or more railroad companies whose lines are so connected, may enter into any arrangement for their common benefit, consistent with and calculated to promote the objects for which they were created; Provided that no such aid shall be furnished, nor any such purchase, lease or arrangement perfected, until a meeting of

the stockholders of each of said companies shall have been called by the directors thereof, at such time and place, and in such manner as they shall designate, and the holders of at least two thirds of the stock of such company represented at such meeting, in person or by proxy, and voting thereat, shall have assented thereto.

Sec. 25. The commissioners of any county, the city or town council of any city or town, and the trustees of any township, which county, city, town or township, has heretofore subscribed to the capital stock of any railroad company, or turnpike, or plank road company, and have issued, or may hereafter issue any bonds for the payment of such subscription, are hereby authorised to sell the said stock, or any part thereof and on such terms as they shall deem to be the interest of said county, city, town or township, respectively, and may apply the proceeds of such sale to the payment of the bonds by such county, city, town or township, respectively subscribed.

Sec. 26. That every railroad company in this State, shall cause all its trains of cars for passengers, to entirely stop, upon each arrival at a station advertised by such company as a station for receiving passengers upon such trains, at least one-half of one minute; and every company, and every person in the employment of such company, that shall violate, or cause or permit to be violated, the provisions of this section, shall be liable to a forfeiture of not more than one hundred dollars, nor less than twenty dollars; to be recovered in an action of debt, upon the complaint of any person, before any justice of the peace of the county in which such violation shall occur: and in all cases in which a forfeiture shall occur under the provisions of this section, the company whose agent shall cause or permit such violation, shall be liable to the amount of such forfeiture, and in all cases, the conductor upon such trains shall be held *prima facie* to have caused the violation of this section, which may occur upon the train in his charge; said forfeiture to be recovered in the name of the State of Ohio, for the use of common schools.

Indiana.

EXHIBIT OF THE OHIO AND INDIANA RAILROAD CO.

The eastern end of this road is at Crestline, in Ohio, the point on the Cleveland and Columbus road where the Ohio and Pennsylvania road terminates, and forms the direct extension of that road to Fort Wayne, in Indiana.

It is the third link in the chain of roads now building from Philadelphia, via Pittsburg to Chicago, Rock Island and Galena. It also forms the second link in the line from Cleveland, via Crestline and Fort Wayne, to Lafayette, Peoria and Burlington, Iowa.

The charter of this company, under the concurrent legislation of the states, Ohio and Indiana, is perpetual, liberal in its provisions, unrestricted in dividends, and free from vexatious or oppressive alterations.

The company has been duly organized, a liberal amount of stock procured along the line, locations completed, releases to the right of way and depot grounds in general procured, and the work of grading, delivery of cross-ties, and track-laying, put under contract since the 28th of January last.

The work along the whole line is now progressing as rapidly as the supply of laborers will permit. It is confidently expected that the whole roadbed will be prepared ready for the rails next spring, as early as navigation will permit the delivery of iron, when, by laying track at four several points, the road may be brought into profitable use in 18 months from the time of its first commencement.

The cheapness of construction warrants this expectation. The whole amount of excavation and embankment is 2,425,000 cubic yards; no expensive bridges are to be built, and good timber for cross-ties abounds along the whole road.

CHARACTER OF ROAD.

The length is 131½ miles, of which 127½ miles is straight, and 3½ miles curved line. One straight line is 43 miles long; another over 30 miles; and the total amount of curvature is only 214 degrees, nearly all of which is curved at towns or stopping places.

In gradients, this line is equally remarkable, hav-

ing no grade greater than $26\frac{1}{2}$ feet per mile, and of the whole road, 63 miles is level. An averaged grade would be $9\frac{1}{2}$ ft. per mile.

It is intended to use the edge, or T rail, of 56 lbs. per yard, on a bed prepared with sub-sills and cross-ties, to secure the greatest possible amount of surface-bearing, and prevent, as much as possible, the settling at the joints.

The contracts and estimates include five miles of sidings and turn-outs, passenger, freight and water buildings sufficient only for the business at first coming upon the road; so, also, of the engines and rolling stock.

POSITION AS TO OTHER ROADS.

1st. *Connection at the Eastern end.*—From Crestline to Cleveland, the Cleveland and Columbus road furnishes an outlet direct to New York by Dunkirk or Buffalo, the whole of which is now nearly ready to be brought into use. From Crestline to Pittsburg, thence to Philadelphia, is in the charge of the Central Pennsylvania and the Ohio and Pennsylvania railroad companies, and will be entirely completed during the coming winter. From the east end of the Ohio and Indiana road, then, a direct route will be completed to New York, and another direct route to Philadelphia and Baltimore, before this road can be finished.

2d. *Connections at the West end.*—From Fort Wayne to Chicago city the surveys are already in progress, by the construction of which, together with an extension from Warsaw to LaSalle, will form a perfect and direct connection with all the roads constructed and constructing in Northern Indiana and Illinois.

The Fort Wayne and Lafayette road, in the rich valley of the Wabash, will furnish the most direct and desirable route from Peoria and Burlington to the Eastern cities. The Ohio and Indiana road holds a commanding position as a main trunk line between these converging roads radiating from each of its ends. By stretching a thread from any point in Northern Indiana and Illinois, to any one of the Eastern cities, the position this road holds will be apparent.

3. *Lateral Connections and Local Advantages.*—Besides the immense accumulation of traffic that will be ready at the termini, it has along its line a region of the highest fertility, made widely available by the North and South connections of railroads, canals, and plank roads, already constructed.

In 12 miles from the eastern end is Bucyrus, a county-seat; in 28 miles, Upper Sandusky, a county-seat, to which a plank road from the north extends; in 40 miles, the Mad river and Lake Erie railroad from Cincinnati to Sandusky; in 72 miles, Lima, a county-seat, and connection of the proposed railroad from Troy on the south; in 86 miles, the Miami canal, at Delphos; in 99 miles, Van Wert, a county-seat; in 110 miles, the state line; and in 131 miles, Fort Wayne, a county-seat, on the Wabash canal, which now has near 200 miles of plank roads leading into it from points north and south of it. This point alone exports and imports at an average, daily, during canal navigation, 154 tons.

For local traffic, that can have no other outlet, the country along this line affords, in its present state of improvement, abundant assurance of a good remunerative business for a railroad, and compares favorably with the region traversed by the Southern and Central Michigan railroads, both in distance and character of country.

The well known profitableness of western roads now brought into use, may be accounted for by the small cost of construction, cheapness of fuel, and especially from the fact, that the whole face of the country, almost every acre, is highly adapted to agriculture, yielding a large amount of tonnage compared with the population; a soil, too, that prevents the construction of good carriage roads, and forces on to railroads the almost entire local traffic.

This portion of Ohio, already in condition to sustain a road, is increasing at the rate of 93 per cent in ten years, while the population of the state increased but 32 per cent. In taxables, the proportionate increase is still greater; that of Allen Co., Ia., being 52 per cent in three years, and those counties in that state that will become directly tributary to the Ohio and Ia. road, upon the completion of

the proposed lines, now contain 177,526 inhabitants, with \$34,000,000 taxables.

The increase of the local business in so fertile a region is accurately registered on the Central Michigan road. Upon this subject their report for last year says.

"The local increase has been so large, that the gross local earnings of the road, for the last three years, amount on the average for each year within a fraction of the entire earnings of the previous year."

The gross receipts of that road, for the year ending 1st May, 1851, was \$947,347, of which \$656,831 was local earnings; and for the year ending May, 1852, it is estimated at \$1,100,000 gross earnings, with way receipts amounting to \$800,000.

Upon these data, the Ohio and Indiana road, upon its way business alone, would earn on its length, 131 miles, \$460,000. Deducting 40 per cent for expenses of repairs, etc., leaves a net earning of 16 7-10 per cent on the estimated cost of the road.

That this estimate is moderate, it needs only for proof, a schedule of an assumed daily traffic, like the following:

100 passengers, each way, a \$3.	\$600
80 tons through freight, each way, \$3 75.	600
40 " way " half distance.....	187
Mail service and express goods.....	79

Makes \$460,000 per year, as above.....\$1,466

ESTIMATED COST OF ROAD, MADE BY J. R. STRAUGHAN, CHIEF ENGINEER.

Road bed, track-laying, chairs, spikes, and station buildings, per contract.....	\$740,000
1,200 tons rails, 56 lbs. per yard.	600,000
Machinery for first year.....	210,000
Right of way, engineering and incidentals.....	90,000

Making an average of \$12,520 per mile. \$1,640,000

The above estimates, based upon contracts, is given with entire confidence, as abundant cash means to complete and equip the road.

Releases for the right of way are in general secured by donation from the citizens along the line; large and valuable grounds at the termini, and the several points on the line, secured, estimated in value at \$80,000.

Besides the donations, the citizens and counties along the line, are, as yet, the only stockholders, thus attesting their confidence in the enterprise, and making it a domestic interest, and to be guarded as such.

CAPITAL STOCK AND SECURITY TO LOAN.

The capital stock of the company, authorised by the law, is \$2,000,000, and may be increased when desired, but this will not be needed until a double track is required.

The corporate and individual stock subscription	\$750,000
Value of donations, depot grounds, etc.	80,000
To be raised on loan, secured by mortgage on the road and franchise, for which \$1,000,000 bonds will be issued, to cover commissions and all other contingencies.....	890,000

Total security.....1,720,000

A large proportion of the stock is paid in, and the directors feel confident of realizing the remainder as rapidly as it can be required in the construction of the road. Additional subscriptions are still being made to the stock of the company.

For the purchase of the rails and machinery to stock the road, the directors have ordered the sale of the bonds of the company to the amount of one million of dollars, bearing seven per cent interest, payable semi-annually in the city of New York. The punctual payment of both principal and interest to be secured by a deed of trust to Mr. John Ferguson, of the city of New York, of the road, depot grounds, franchises, and the personal property of the company.

These bonds are convertible into the stock of the company at par, at the pleasure of the holder, and at any time before the principal shall fall due—fifteen years. In case of failure in the payment of either interest or principal, the trustee is authorised

to take possession of the road, grounds, equipments, etc., or any part thereof, and to use, occupy, or sell the same, without legal process or delay, and apply the proceeds to the payment of such interest or principal.

A copy of the laws authorising the issue and sale of these bonds, is herewith annexed.

In this statement we have desired to keep within bounds as to the favorable character of the ground for the cheap construction of a first class railway; as to the complete aggregate cost of such a road ready for use, and as to its local and relative position for business. It is the road, completed and equipped, which we now offer for the security of these first and only bonds of the company.

Messrs. Winslow, Lanier & Co., No. 52 Wall street, New York, are the authorised agents for the sale of the bonds, who are prepared to furnish any additional information, maps of the lines etc.

WILLIS MERIMAN,
President Ohio and Indiana R. R. Co.

The Submarine Telegraph Between England and Ireland.

The following extremely interesting history of the submarine telegraph between Holyhead and Howth is given by *Saunders's Dublin News Letter*:

This undertaking, which has been so suddenly and unexpectedly executed, and which has more or less taken the public by surprise, is now complete, and its success certain. It certainly appeared to have been hitherto shrouded in unnecessary secrecy; but the fact was that there were but few engaged in the gigantic enterprise, and those few have been up to this moment, unremittingly and absorbingly engaged in its performance. There were other reasons for reserve; the task was daring, difficult—and, in respect to distance, unprecedented; the projectors, some private individuals, might fail under one or other of the numerous accidents to which it was liable, and they might become subject to the charge of rashness and incompetency. Publicity is, no doubt, serviceable to a powerful and chartered company; in it the responsibility is divided, and personal risk in the event of failure is consequently diminished; but a speculation attempted by an individual, and yet of great national importance, is differently circumstanced. However, the Howth and Holyhead Submarine telegraph is now an established fact, and its promoters are well worthy of the earnest congratulations of all who are capable of appreciating the attributes of decision, energy, and skill. It is to Messrs Newall and Co., of Gateshead-upon-Tyne, assisted by the Gutta Percha company of London, that Europe and America are indebted for the Howth and Holyhead Submarine Electric Telegraph.

Three several companies had been advertised for telegraphing across the Irish sea; the usual means for alluring shareholders, electing directors, appointing agents, engineers, etc., had all been put into operation. These necessarily ponderous and unwieldy corporations were slowly and laboriously proceeding to put their much-talked of schemes into practice, when about three weeks ago the idea flashed across the mind of Mr. R. S. Newall, "This Irish telegraph will be a paying concern; it will not require much capital. The firm with which I am connected have facilities for doing the thing—why should we not set about it and do it at once ourselves?" He accordingly explained his views to his partners, got their consent, and immediately applied to Samuel Statham, Esq., conductor of the Gutta Percha works, City Road. "Can you supply us with eighty miles of telegraph wire, doubly covered with gutta percha, within a fortnight?" "I'll try," was Mr. Statham's response; and accordingly it was commenced and finished within the time agreed on, being latterly done at the rate of 12 miles a day. The coated wire was then sent down to Gateshead-on-Tyne to be surrounded with twelve galvanized iron wires twisted around it in a spiral. The cable being finished, Mr. Newall called on Mr. Statham last Tuesday week, and then for the first time told him the object for which it was manufactured. It was agreed that Mr. Statham should bring a staff of assistants and the requisite apparatus, to Holyhead the next day to meet the wire. The admiralty was com-

nicated with, and kindly sent down Captain Beechy R. N., to give his valuable advice and assistance; and they also lent the *Prospero* government steamer, Lieut. Aldridge, R. N., to aid in carrying out the undertaking. Meanwhile the *Britannia* was hired to bring the cable from Whitehaven, and afterwards pay it out from Holyhead to Dublin.

The enormous cable, eighty miles in length, weighing a ton per mile, and all in one continuous piece, was wound up into immense coils, placed on trucks, one after the other, and drawn by steam from Newcastle-upon-Tyne to Whitehaven—from one side of England to the other. The *Britannia* as has been stated, steamed to Whitehaven to take it on board, when, unfortunately, it was found that the entrance to the dock was too narrow to permit the vessel to enter. The coils had then to be replaced on trucks and carried to Maryport, where they were at length embarked and speedily conveyed to Holyhead. Now, it might be hoped that all difficulties had been overcome, and that there was nothing to do but to lay down the line; but Mr. Statham, who had already achieved the Dover and Calais connexion, knew too well the dangers and accidents to which those concerned were liable in the event of a gale to trust anything to chance, or to proceed one step further without a careful preliminary inspection. The insulation of copper was tested, and found to be defective, then the portions stowed in the various departments of the ship were examined separately, and at last it was ascertained that the fault lay in some eight miles of the line lying in the bottom of the hold. There was nothing for it but to disembark the Leviathan bulk, and to track it step by step to the exact seat of the defect. This was accordingly done, the fault remedied, and by Tuesday morning the giant rope was in readiness to be placed in its abiding home.

Early on Tuesday morning the *Britannia*, under the command of Captain Browne, and towed by the *Prospero*, under Lieut. Aldridge, R. N., commenced paying out the cable, according as it sunk by its own weight to the bottom of the sea, along the route from Holyhead to Howth. There were on board, besides the officers and crew, R. S. Newall, Esq., with a gang from the Gateshead Works; Samuel Statham, Esq., with a gang from the Gutta Percha works; Thomas Allen, Esq., the inventor of a new telegraph instrument; and Mr. Reid, jun. L. D. Gordon, Esq., (Mr. Newall's partner) had previously departed to Dublin to supervise the land line from the latter city to Howth. Occasional difficulties were experienced in the laying out of the coils; but they were all overcome by the skill and energy of Messrs. Statham and Newall. Slowly the vessels ploughed on at a rate varying from three to five miles an hour; and at length between seven and eight o'clock on the same evening, the *Britannia* anchored off Howth. An electric current was sent through the wire to Holyhead and the returning answer brought the pleasing intelligence that the line was all right throughout, and perfectly insulated. The portion of cable requisite for completing the connexion with the shore and land line was now laid down, and the parties engaged in this arduous undertaking sought some repose, after nearly two days and nights of excessive and harrowing exertion, about daybreak on Wednesday morning.

It might be supposed that everything was now smooth and prosperous. Buoyant with hope, those who had already suffered so much in the attempt went down at noon on Wednesday, to the Amiens street terminus, to test the success of their enterprise. The batteries were put in action, the wires were connected, and they anxiously waited a reply, but none arrived! They telegraphed to Howth and were answered—the fault was further off than the land line. An express train was provided and they dashed down to Howth. Again they telegraphed to Holyhead from the shore—no answer! They took a boat and rowed to the ship. A message sent to Holyhead, brought back the reply that "all was right there." It was now manifest that the fault lay somewhere between the *Britannia* and the shore.

It was necessary again to take up this portion of the line, and test it little by little. The defect was probably caused by the straining of the ship upon a line comparatively short. When discovered it was soon remedied on board. It was again recoil-

ed into an open boat, the crew of which made a renewed attempt to lay it down to the shore. In the mean time Messrs Statham and Newall proceeded to shore in another boat with the instruments, but when they overtook the boat which had been engaged in paying out the cable they found it at a stand, the crew having managed to sink the whole line while still some distance from the shore. Again Mr. Statham had to return to the ship, get another mile of cable uncoiled, recoil it in the boat and then row to where the deficient extremity of the cable remained; and there, in an open boat, at two o'clock a. m., with the aid of a little burning spirits, to solder the wires, re-unite the gutta percha, and restore the cable to a continuous and insulated whole. This was effected the remaining distance to the shore laid down, and that night of toil was at length repaid by a success the most ample and complete. On Thursday the *Britannia* let go the cable and steamed away; while those on shore, after repeated experiments, were satisfactorily convinced that the communication with Holyhead was now at length without impediment.

Franklin Institute.

Proceedings of the Stated Monthly Meeting, June 17th, 1852.—Mr. Geo. W. Smith reminded the meeting that on February 20, 1851, he had presented a list of the number of miles of railroads at that time completed in the United States, and an estimate of the number of miles that would be completed during the present year. Nearly two years having elapsed since the presentation of that estimate, he now had it in his power from the reception of information from the whole of the United States, to test the accuracy of the predictions. The amount completed, and to be completed during the present year, inclusive, may be stated at 13,200 miles, including therein every description of railway, either public or private, an amount somewhat exceeding his former estimate, and derived mainly from the construction of lines not at that time in progress.

He then proceeded to give an estimate from the information that he had collected of the progress of these works during the next three years, ending at the termination of 1855; admitting, however, that the same accuracy was not attainable as in the former estimate, inasmuch as that the period would be greater, and many contingencies which might affect the result could not be made the subject of calculation; the amount, however, he estimated at 18,900 miles at the minimum, and might attain at the maximum 19,700 miles, and even reach 20,000 miles if the bills now before congress, in aid of Iowa and Missouri, should become law, and provided no commercial convulsion should create a stringency in the money market.

He then described the vast army of laborers on these works, and the various establishments directly or indirectly connected with them, as one of the great causes of the rise in the price of food, the others being emigration to California, the unprecedented immigration to this country from the great swarming hive of Europe, and the unprecedented increase of our urban population in a great measure attributable to this immigration, and the activity of commerce consequent thereon, and the result moreover in a great degree of these very railways, plank roads, canals, and steam navigation. The high price of provisions was thus enhanced on the one hand, and on the other prevented rising still higher by one and the same set of causes, which are likely still to continue for some time in operation. The drought of the last year and the unusual cold of the present, could but partially account for this rise.

In speaking of the density of population already attained in some parts of the United States, Mr. Smith referred to a map which he had constructed, which represented a curious illustration of this density. He traced the boundary of an area as large as the kingdom of Great Britain, as follows: commencing on the Atlantic at the mouth of the St. Croix river, ascending it to the head; from this point a line was drawn to the Saco, where it debouched from the White Mountains in New Hampshire, thence to Sandy Hill on the Hudson, in New York; thence to Oswego on lake Ontario, including all south of it in New York, and all of New Jersey, Pennsylvania, and Maryland, north of the

Blue Mountains; along this mountain to the Potowmac in Maryland, thence by the latter river to Washington, D. C., thence by a straight line to New Haven on Long Island Sound, and thence by the sea to the place of beginning in Maine. The included area will be 84,000 square miles, a close approximation to the kingdom aforesaid, and the population of this area at the present moment, including the usual increase since the census, is 8,180,000 in round numbers, an amount equal to that of Great Britain at the accession of George III, and about one-third of that at the present day. The present population of the American area within the boundaries just mentioned is twice as great as the average population to the square mile in Europe, and vastly greater than the population of eastern or northern Europe, although much less, of course, in comparison, than the British, French, German, Austrian and Italian countries, &c.

A line drawn from Massachusetts bay to the Potowmac, almost in a straight line, passes through more numerous and more populous cities than can be found on a similar line of about 400 miles in extent, drawn on any part of the globe, with the exception of China; London must also be excepted. The population of New York, with its suburbs in Long Island, New Jersey, &c., included in a circle of twelve miles radius round the City Hall, (as the metropolis of London is in a circle of twelve miles round St. Paul's,) is at the present moment, (1852,) 860,000 people, and at the termination of 1855, which will be the period when the 20,000 miles of railway mentioned in his address to the meeting this evening, would be completed, namely, in a little more than three and a half years from the present time, New York will contain more than one million.—*Journal of the Franklin Institute.*

Exhibit of the Tioga Railroad Company.

The Tioga railroad company extends north from the rich bituminous coal mines, near Blossburg, Tioga county, Pennsylvania, to the New York State line, near Lawrenceville, a distance of twenty-six miles, and at that point connects with the Corning railroad of fourteen miles in length, forming a continuous road terminating at the town of Corning, situated on the New York and Erie, and Buffalo Corning and New York railroads, and Chemung canal.

The Corning railroad is now being relaid with heavy iron H rails, and has been leased for a period of ten years to the Tioga railroad company, so that the latter named company will operate and work the entire line of railroad between the coal mines, Blossburg and Corning.

The track of the Tioga railroad is now laid with a flat bar rail, and its original cost was about \$40,000.

Under authority of recent Acts of the Legislature of Pennsylvania, and with the concurrence of the parties in interest, the bonds, stock and claims have been consolidated as follows:—

Preferred dividend consolidated stock, 3,-	
800 shares at \$50	\$190,000
Common consolidated stock, 3,850 shares	
at \$50	192,500
The Legislature has authorized the State authorities to deliver up for cancellation, stock amounting to about	50,000

The Tioga railroad company have made a contract with responsible parties for relaying the track upon the New York and Erie, or six feet gauge, and placing thereon very superior heavy iron H rails. This road, the entire completion of which is guaranteed on or before the 15th of August next, will, when finished, equal, in the permanency of its structure, any railroad in the United States.

For the purpose of meeting the expense of relaying the road and its equipment, the company have, under the most ample authority from the Legislature of Pennsylvania, issued seven per cent. coupon bonds to the amount of \$350,000, payable, principal and interest, in the city of New York, convertible into stock, and secured by a mortgage, in trust, to Theodore Dehon, Alfred S. Fraser, and Watts Sherman, Esq's, of the city of New York, which mortgage is the first and only lien upon the road, its furniture and franchises.

Locomotive engines and cars are contracted for, sufficient to transport the immense quantities of

lumber, coal, and miscellaneous freight, which will pass over the roads, as well as passengers.

The coal, which is of the very best quality and inexhaustible, is now mined and delivered in cars at Blossburg, at about fifty cents per ton; and during the past and present year has commanded three dollars and fifty cents per ton at Corning.

With ample facilities of transport, the sale and consumption of this coal will be immensely increased, and it is confidently believed that the demand will only be limited by the capacity of the road.

Apart from the conveyance of coal, there is a very large local business from timber, lumber, shingles, coke, iron, glass, and miscellaneous articles. There are now over twenty millions of feet of lumber in and near the line of road, which will be carried to a ready and good market when the track is relayed. Many who have heretofore rafted their lumber will avail themselves of the more rapid and certain conveyance by railroad. A plank road, seventeen miles in length, and running through a section of good pine timber land, is now being constructed and will terminate at an important point on the railroad; the business and profitable revenue of the company will thus be greatly increased.

In the vicinity of Blossburgh are abundant deposits of iron ore and fire clay of the best quality; fire stone and fine white sand for glass works; stone furnishing the best material for millstones, whetstones, grindstones, and hearthstones for furnaces, also abound in the same neighborhood.

The valley through which the road runs, is not surpassed in the fertility of its soil, yielding abundantly superior wheat, and all agricultural products common to the rich valley lands of southwestern New York.

The population of the county of Tioga has increased three-fold since this company was chartered; the local passenger travel is consequently increasing rapidly, and with a steadily increasing through travel north and south, the passenger business must be large and profitable.

The company have the most liberal and ample powers granted to them by the legislature. Branches to mines and mills in any direction are authorized, and will be made whenever such extensions will insure a profitable return for the outlay. There are several very important extensions authorized and contemplated, which, when made, will add greatly to the value of the company's property and earnings. The road being of the same gauge as the New York and Erie railroad, facilitates the uninterrupted change of produce at the least expense along the extended line of country bordering on that great work.

The following estimate of business over the road for one year after its completion, is made after a careful consideration of the elements of revenue which surround it.

150,000 tons coal, at 62½ cents per ton is... \$93,750
35,000,000 feet of lumber, at 40 cents per

million 14,000

Passenger and miscellaneous freight 15,000

122,750

Expenses, say 50 per cent 61,375

Estimated net earnings for the year ending

Aug. 1853 \$61,375

From which there are to be deducted—

For interest, say 7 per cent. on \$350,-

000 \$24,500

For dividend on preferred

stock \$11,400

Less amount assumed and pay-

able by the state under her

guarantee 7,500

3,900

— 28,400

Leaving a surplus for non-
preferred stockholders \$32,975

By reference to previous statements it will be observed that property costing, when relaid and equipped, \$790,000, is mortgaged for \$350,000, and that the estimated net earnings amount to \$61,375 a sum largely exceeding the 7 per cent agreed to be paid on the bonds issued.

Referring to sections 7 and 9 of the act of the legislature of Pennsylvania passed the 6th of April 1850, and copied herewith, full authority is given to issue these bonds, and create a mortgage to secure them, and a sale of them is made as valid below as at or above par.

JOSEPH W. RYERS, President.

Louisiana Railroads.

The late act of the Legislature for the organization of corporations for works of public improvement and utility, is based upon very liberal principles, and is a great step in advance of our past policy. Under this act, charters have been framed for the Jackson and Opelousas railroad companies, which have both been organized.

New Orleans and Jackson Railroad Company.

—Officers—President, James Robb; Directors—James Robb, A. D. Kelly, J. P. Benjamin, J. P. Harrison, Isadore Labutin, W. S. Campbell, John Slidell, W. P. Converse, E. W. Moise, Emile La Sere, H. S. Buckner, Charles Pride.

We extract the first five provisions of the charter—

1. The said corporation shall be called the "New Orleans, Jackson, and Great Northern railroad company," and its domicil is fixed in the city of New Orleans.

2. The said corporation is established for the purpose of constructing, working and maintaining a railroad from New Orleans to Jackson, in the State of Mississippi, thence northward, through the State of Mississippi, towards the point that shall be deemed most favorable for continuing the communication to Nashville, in the State of Tennessee. The road to be made on such a scale as shall serve for the main trunk of a continuous line of communication between New Orleans and the northern and western portions of the confederacy.

3. The capital stock of the company is fixed at three millions of dollars, divided into one hundred and twenty thousand shares of twenty-five dollars each. A payment of five per cent. on the amount of each share shall be made at the time of subscribing. The subsequent payments shall be made in such sums, and at such periods, as shall be fixed by the Board of directors; *provided*, that no call shall be made for more than ten per cent. at one time, and that sixty days' notice of each call shall be given, by publication in two newspapers in New Orleans and two in Mississippi. Not more than three calls shall be made in any one year.

4. The said corporation shall go into operation and be organized, as soon as shares of stock to the amount of three hundred thousand dollars shall have been subscribed.

5. The business of the corporation shall be conducted at its domicil, in the city of New Orleans, by a board composed of eighteen directors, who shall be stockholders, of whom six shall be selected from amongst the stockholders residing in the State of Mississippi. A *quorum* shall consist of at least seven directors. The directors shall elect one of their body as president of the company, at their first meeting after their election. At all elections by the stockholders at all their meetings, each share shall be entitled to one vote.

Opelousas Railroad Company.—Officers—Christopher Adams, president; Directors—C. Adams, Jr., A. Lanfear, J. Y. de Egana, J. W. Stanton, A. Chiapella, J. D. Denegre, R. B. Sumner, L. J. Sigur, L. Leon Bernard, Gen. A. Declouet, Harvey Hopkins, M. O. H. Norton.

The first five provisions of the charter are as follows:

1. The said corporation shall be called "The New Orleans, Opelousas and Great Western railroad company," and its domicil is fixed in the city of New Orleans.

2. The said corporation is established for the purpose of constructing, working and maintaining a railroad from Algiers, on the opposite bank of the Mississippi river from New Orleans, and thence westward through or near Thibodaux; thence to Berwick's Bay; crossing which, thence to Washington or near it, on the Courtabeau, in the parish of St. Landry, and from thence hereafter to be continued to the point on the Sabine river most favorable for the purpose of continuing said road through the State of Texas to El Paso, on the Rio Grande,

The road to be made on such a scale as shall serve for the main trunk of a line of railroad, as shall form a continuous communication between New Orleans, Texas and the Pacific States or Territories, and such branches as they may hereafter choose to make.

3. The capital stock of the company is fixed at three millions of dollars, divided into one hundred and twenty thousand shares at twenty-five dollars each. A payment of five per cent. on the amount of each share shall be made at the time of subscribing. The subsequent payments shall be made in such sums and at such periods as shall be fixed by the board of directors: *Provided*, that no call shall be made for more than ten per cent. at one time, and that sixty days' notice of each call shall be given, by publication in one newspaper in New Orleans, which shall be known to the stockholders as the official paper of the company, and such newspapers as may be designated along the line of the road. Not more than three calls shall be made in this year—the subsequent years, the calls to be fixed by the stockholders at their annual meeting in January, 1853.

4. The said corporation shall go into operation and be organized, as soon as shares to the amount of three hundred thousand dollars shall have been subscribed.

5. The business of the corporation shall be conducted at its domicil, in the city of New Orleans, by a board composed of eighteen directors, who shall be stockholders. The directors shall elect one of their body as president of the company at their first meeting after their election. A *quorum* to do business shall consist of at least seven directors. At all elections by the stockholders, at all their meetings, each share shall be entitled to one vote.

—*De Bow's Review.*

How Coal was Made.

Geology has proved that, at one period, there existed an enormously abundant land vegetation, the ruins of which, carried into seas and there sunk to the bottom, and afterwards covered over, by sand and mud beds, became the substance we now recognize as coal. This was a natural transition of vast consequence to us, seeing how much utility we find in coal, both for warming our dwellings and for various manufactures, as well as the production of steam, by which so great a mechanical power is generated. It may naturally excite surprise that the vegetable remains should have so completely changed their apparent character and become black. But this can be explained by chemistry; and part of the marvel becomes clear to the simplest understanding when we recall the familiar fact, that damp hay, thrown closely into a heap gives out heat and becomes of a dark color. When a vegetable mass is excluded from the air, and subjected to a great pressure, a bituminous fermentation is produced, and the result is mineral coal, which is of various characters, according as the mass has been originally intermingled with sand, clay, or other earthly impurities.

On account of the change effected by mineralization, it is difficult to detect in coal the traces of a vegetable structure; but these can be made clear in all except the highly bituminous coking coal, by cutting or polishing it down into thin transparent slices, when the microscope shows the fibres and cells very plainly.

From distant isolated specimens found in the sandstones amidst the coal beds, we discover the nature of the plants of this era. They are almost all of simple cellular structure, and such as exist with us in small forms (horse tails, club mosses, and ferns,) but advanced to an enormous magnitude. The species are all long since extinct. The vegetation generally is such as now grows in clusters on tropical islands; but it must have been the result of a high temperature obtained otherwise than that of the tropical regions now is, for the coal strata are found in the temperate, and even the polar regions.

The conclusion, therefore, to which most geologists have arrived, is, that the earth, originally an incandescent or highly heated mass, was gradually cooled down until in the carboniferous period it fostered a growth of terrestrial vegetation all over its surface, to which the existing jungles of the tropics are mere barrenness in comparison. This

high and uniform temperature, combined with a greater proportion of carbonic acid gas in the manufacture, would not only sustain a gigantic and prolific vegetation, but would also create denser vapors, showers and rains; and these again gigantic rivers, periodical inundations, and deltas. Thus all the conditions for extensive deposits of wood in estuaries would arise from this high temperature; and every circumstance connected with the coal measure points to such conditions.—*Chambers' Miscellany.*

American Railroad Journal.

Saturday, July 17, 1852.

Steubenville and Indiana Railroad Company.

We are advised that the remaining 35 miles of the Steubenville and Indiana railroad, to Newark, has been let on the 8th of last month to responsible bidders on terms highly favorable to the railroad company. This 35 miles comprises the distance from Coshocton to Newark. The graduation and masonry on this part of the line are let to good and responsible bidders, at a rate something under \$5,000, per mile. On this portion of the road it is expected the cars will be run in less than one year from the time of letting.

This is the entire line from Steubenville to the Central Ohio railroad at Newark. From Coshocton it is proposed at an early day to make a connection at Mt. Vernon, with the Owl Creek valley railroad, of which no ice will be hereafter taken. On the road from Steubenville to Coshocton many of the sections are nearly completed, and some will be completed in a month or less. Iron for the whole road has been contracted for on terms favorable to the company.

A subscription has been actively set on foot in the town of Lancaster, for the purpose of constructing a connecting road from the Wilmington road to the Steubenville and Indiana road at Newark.

These connections, i. e. the Wilmington road and the Bellefontaine road, through the Owl Creek valley road alluded to, which are so earnestly sought for by those interested, indicate the centrality of the Steubenville and Indiana road with reference to the Ohio improvements.

The Pittsburg and Steubenville road by which the Steubenville and Indiana road connects with the Pennsylvania Central railroad and other eastern improvements, is now entirely under contract, and work actively commenced.

Michigan.

Central Railroad.—“The efficient managers of this road,” says the Detroit Free Press, “have made another advance movement. Hereafter the cars will leave Chicago at half-past eight in the morning, and quarter before nine P. M., arriving here at 8 o'clock P. M. and 7 A. M. The time of departure from Detroit westward, will hereafter be at 9 o'clock A. M., and five (instead of three quarters past five, as heretofore,) in the afternoon. The running time from here to Chicago, will be 11 hours; from Chicago to Detroit 10½ hours. By this arrangement the travel from Chicago to New York will be reduced to about 45 hours! The incredible improvement in travel through the country—the rapidity of motion, it will be seen is fully kept up by the Michigan Central railroad. There has been much said of this road; but we doubt if in all the States of the Union a more perfect work can be found, one more elaborately provided with the conveniences of travel, and conducted with more regularity and success, or at less expense,

considering the receipts of the road. We say this with a pretty large experience of railroad travel, and with an excusable feeling of pride in a work which reflects credit upon its projectors and managers.”

Rabun Gap Railroad.

A great meeting in favor of this project, took place at Anderson S. C. on the 1st inst. We learn from the *Palmetto State Banner*, that Judge O'Neale presided; and that a committee of 21 was appointed, to which were referred all propositions and questions relative to the object of the meeting. The committee made a report with resolutions, which were unanimously adopted. One of these provided for a committee to memorialize the legislature for a charter incorporating the Blue ridge railroad, from Anderson C. H., and by the Rabun Gap; another for a committee to prepare an address to the states interested. The meeting which was numerous, enthusiastic and harmonious from beginning to end, was addressed by Judge O'Neill, Col. J. P. Reid, of Anderson, Col. Whitesides, of Tennessee, Dr. Phillips and Mr. Habersham of Georgia, Mr. Pratto and Col. Thomas, of North Carolina, and C. M. Furman, Esq., of Charleston.

There can no longer be any doubt says the *Banner*, that the Rabun Gap road will be built.

Kentucky.

Lexington and Danville Railroad.—The stockholders in the Lexington and Danville railway have voted to extend their road to McMinnville, on condition that \$500,000 stock be immediately raised between Danville and the Tennessee lines, and a like sum in addition within a year. More than \$300,000 has been subscribed, and no doubt is entertained that the whole will be taken. The stock in Tennessee has been nearly all taken. A continuous railway will ere long be opened from Cleveland to the Gulf of Mexico. John Barclay, of Boyle county, has been appointed president, in the place of Mr. Barbour, resigned.

Correction.

In our paper of June 5, an article entitled “Covington and Lexington railroad,” caused some misapprehension, from the wording of its title, which should have read “Covington and Lexington, and Maysville and Lexington railroads.” The reader will see that, with the above correction, the article would have been perfectly intelligible.

These roads start from points upon the Ohio river some 75 miles distant. They both find it convenient to make the town of Paris, 19 miles from Lexington, a common point, and they wisely joined forces, and are making a common road for this distance, in preference to constructing two parallel lines. The roads are in no respects rivals to each other, running, as they do, for the most of the way, in very different directions.

Lake Erie, Wabash and St. Louis Railroad.

We give in another column the proceedings of the friends of this project, at a convention recently held at Logansport, Indiana. The above route is one of the best unoccupied fields for a railroad, in the United States. It traverses the great natural route of travel and freight moving from the western end of Lake Erie westward, toward St. Louis. It also runs through a region of unsurpassed fertility in this country. With such inducements, and the means that the people on the line of the proposed road can easily contribute, the complete and immediate success of the project, cannot for a moment remain a problem.

Carhart's Improved Turntable.

We invite attention to the advertisement of Mr. Carhart, of his improved Turntable, which will be found in another column. We are informed that the Turntables constructed by Mr. Carhart have given entire satisfaction to the companies for whom they have been built. They have been placed upon several roads in this vicinity. We believe Mr. Carhart to be a good workman, and as his prices are very reasonable, we commend his advertisement to the attention of those who may be in want of such an article.

Sault Ste Marie Canal.

We learn by the Montreal Courier that the Hon. J. Young, and Hon. Mr. Killaly, the chief commissioners of the Board of Public Works, are now on a visit to Sault Ste. Marie, to ascertain some facts necessary to be known, preliminary to the construction of a ship canal round the Sault. The Courier expresses gratification that the government is alive to the necessity of this important work, which will enable Canada to secure a full share of the Lake Superior trade to British waters.

Lake Ontario Auburn and New York R. R.

The directors of the Lake Ontario, Auburn and New York railway company, at a meeting recently held at Auburn, elected Thomas Y. How, president; Benjamin F. Hall, secretary; Joshua Burt, treasurer. An executive committee, consisting of Messrs. R. F. Russel, Isaac Bell, and B. Hall, was appointed to prepare with the aid of the engineers, the necessary specifications for the constructing of the proposed railroad, and power to advertise for proposals as soon as specifications shall be prepared.

Susquehanna Railroad—Appointment of Chief Engineer.

We learn that the directors of this company have appointed James P. Kirkwood chief engineer. Mr. K. is an engineer of great experience and high reputation. He was formerly employed on the Boston road, and resided for a short time in this city. Subsequently he was employed on the Erie road as engineer and also as superintendent. The last appointment held by him was that of chief engineer of the Pacific railroad, leading from St. Louis west. This post he was obliged to leave in consequence of a severe attack of bilious fever, which prevents his return to the southwest. So highly are his services appreciated by that company, however, as to have induced his being retained as consulting engineer, with a liberal salary.

In all these positions, Mr. Kirkwood has sustained himself with eminent ability, and proved himself an accomplished engineer.

We learn that it is the intention of the directors to put the road under contract at as early a day as possible. With this view the surveys will be resumed and the road located, and it is expected that the work will be ready for the contractors before winter.

In the meantime, our citizens will have an opportunity to become subscribers to the capital stock. Considerable progress has been made in obtaining the amount allotted to our citizens, and it is to be hoped that the city will respond to the appeals of the directors with the same promptitude and liberality with which they were met by the people along the line of the road.

We are informed that the road will surely be put under contract without delay if this be done. If it depends upon Albany we have no doubt of a favorable result.—*Albany Journal.*

Railroads in Spain.

The Spanish provincial correspondence and newspapers are full of accounts of railroads and projects of railroads, by means of which every province looks forward to have its resources developed and its riches increased. Cadiz hopes to see her fallen trade revive; Barcelona to drive even the English smuggling trade in cotton out of the market. The semi-official organ of the ministry avails itself of the enthusiasm awakened on the subject by representing the present ministry as the government whose special commission it is to endow the country with these means of communication, which are expected to change the face of Spain, and put her on a level with the other nations of Europe.

Stock and Money Market.

The money market presents few points of interest. Money continues abundant, with active operations in the fancies, which are at a high figure. Sound securities are firmly held, with generally advancing rates. The whole aspect of the market is favorable, and the whole railroad interest seems to be in the most prosperous condition.

The market for new loans is dull. This inactivity is due rather to the season of the year than to the want of money. Too many of our active business men are out of town to allow much activity in any branch of business. The prospect of an active bond market upon the commencement of the fall business, is good.

The operations of the United States Mint at Philadelphia, for June, 1852, will be seen by the following table:

COINAGE FOR JUNE.*Gold.*

168,170 Double Eagles.....	\$3,363,400 00
22,630 Eagles.....	226,300 00
41,633 Half Eagles.....	208,165 00
97,670 Quarter Eagles.....	244,175 00
227,875 Dollars.....	227,875 00

557,978 Pieces.....	\$4,269,915 00
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Silver.

105,000 Dimes.....	10,500 00
1,850,700 Three Cents.....	55,521 00

2,513,678 Pieces.....	\$4,335,936 00
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Copper.

936,788 Cents.....	9,367 88
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3,450,466 Pieces.....	\$4,345,303 88
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GOLD BULLION DEPOSITED FOR COINAGE IN JUNE.

From California.....	\$6,560,000 00
From other sources.....	127,000 00

Total.....	\$6,687,000 00
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Silver Bullion deposited.....	27,400 00
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GOLD DEPOSITS.

January.....	1851. \$5,071,667	1852. \$4,161,680
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February.....	3,004,970	3,010,232
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March.....	2,880,271	3,892,156
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April.....	2,878,353	3,091,037
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May.....	3,269,491	4,335,578
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June.....	3,637,560	6,687,000
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Total.....	\$20,742,312	\$25,177,673
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The deposits of gold at the United States Mint, up to to-day, for June, amount to \$6,500,000. The following is a statement of the exports and deposits for the first half of the year 1852:

Deposits from Jan. 1 to June 1..... \$20,511,343

Deposits from June 1 to July 1..... 6,500,000

Total deposits for 6 months..... \$27,011,343

Exports during same period..... 12,663,560

Excess of deposits over exports..... \$14,347,783

In this statement the deposits for June at the New Orleans and other branch mints are not included. These will probably swell the total amount of deposits nearly a million.

We append the following series of statements relative to the operations of the mint, prepared from an elaborate table recently made out:

COINAGE OF ALL THE MINTS.

To close of 1847.....	\$145,111,295 61
To close of 1848.....	5,879,720 49
To close of 1849.....	11,164,695 82
To close of 1850.....	33,892,306 00
To close of 1851.....	63,488,524 33
Five months 1852.....	22,336,331 74

Total coinage at all the mints..... \$281,878,874 59

TOTAL COINAGE OF EACH MINT.

U. S. Mint at Philadelphia.....	\$228,690,568 39
Branch mint at New Orleans.....	45,491,665 00
Branch mint at Charlotte, N. C.	3,211,563 50
Branch mint at Dahlonega, Ga....	4,485,077 50

Total coinage..... \$281,878,874 59

COINAGE OF THE DIFFERENT METALS.

Gold coinage.....	\$202,205,888 50
Silver coinage.....	78,252,060 90
Copper coinage.....	1,420,925 19

Total coinage..... \$281,878,874 59

The following is a statement of the value of gold, of domestic production, deposited at the Mint and its branches, from their organization to May 31, 1852:

DEPOSITS OF AMERICAN GOLD.

From California.....	\$118,608,082
From other sources.....	16,166,581

Railway Share & Stock List;**AMERICAN RAILROAD JOURNAL.**

NEW YORK, JULY 17, 1852.

CITY SECURITIES—BONDS.

Brooklyn 6's.....	107
Albany 6's, 1871-1881.....	107
Cincinnati 6's.....	100
St. Louis.....	96
Louisville 6's 1880.....	94
Pittsburg 6's, 1869-1871.....	—
New York 7's, 1857.....	109
New York 5's, 1858-'60.....	100
New York 5's, 1870-'75.....	103
New York 5's, 1890.....	107
Fire loan 5's, 1886.....	—
Philadelphia 6's, 1876-'90.....	104
Baltimore 1870-'90.....	106
Boston 5's.....	102

RAILROAD BONDS.

Erie 1st mortgage, 7's, 1867.....	113
Erie 2d mortgage, 7's, 1859.....	107
Erie income 7's, 1855.....	106
Erie convertible bonds, 7's, 1871.....	99
Hudson River 1st mort., 7's, 1869.....	107
Hudson River 2d mort., 7's, 1860.....	94
New York and New Haven 7's, 1861.....	106
Reading 6's, 1870.....	86
Reading mortgage, 6's, 1860.....	90
Michigan Central, convertible, 8's, 1860.....	109
Michigan Southern, 7's, 1860.....	99
Cleveland, Col. and Cin. 7's, 1859.....	109
Cleveland and Pittsburg 7's, 1860.....	101
Ohio and Pennsylvania 7's, 1865.....	102
Ohio Central 7's, 1861.....	—

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

July 8. July 15.

Albany and Schenectady.....	109	109
Boston and Maine.....	106	106
Boston and Lowell.....	108	108
Boston and Worcester.....	103	104
Boston and Providence.....	87	89
Baltimore and Ohio.....	75	82
Baltimore and Susquehanna.....	29	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	146	—
Delaware and Hudson (canal).....	126	125
Eastern.....	98	198
Erie.....	88	87
Fall River.....	99	—
Fitchburg.....	102	103
Georgia.....	—	—
Georgia Central.....	103	—
Harlem.....	73	71
“ preferred.....	112	111
Hartford and New Haven.....	118	—
Housatonic (preferred).....	35	35
Hudson River.....	67	64
Little Miami.....	—	—
Long Island.....	20	20
Mad River.....	—	—
Madison and Indianapolis.....	112	—
Michigan Central.....	114	113
Michigan Southern.....	119	118
New York and New Haven.....	113	113
New Jersey.....	136	137
Nashua and Lowell.....	106	—
New Bedford and Taunton.....	117	117
Norwich and Worcester.....	54	55
Ogdensburg.....	27	—
Pennsylvania.....	44	44
Philadelphia, Wilm'gton & Balt.	32	32
Petersburg.....	—	—
Richmond and Fredericksburg.....	100	100
Richmond and Petersburg.....	35	35
Reading.....	88	88
Rochester and Syracuse.....	122	122
Stonington.....	54	59
South Carolina.....	—	—
Syracuse and Utica.....	132	133
Taunton Branch.....	115	115
Utica and Schenectady.....	135	137
Vermont Central.....	16	15
Vermont and Massachusetts.....	22	21
Virginia Central.....	—	—
Western.....	103	104
Wilmington and Raleigh.....	57	57

Zinc Paint.

The attention of our readers is called to the advertisement of Zinc Paint in another column.

EDITOR OF RAILROAD JOURNAL:

Dear Sir—An effort has been made by several individuals, to get stock subscribed for the construction of a "short line" railroad, from Dayton to Cincinnati, which has excited some attention.

As many persons may be led to believe that the proposed line would be the shortest and best road between Cincinnati and Dayton, and that the public interest would be promoted by the construction of the road, I will state my reasons for believing that the proposed road should not be built.

1. This line is not in fact, for railroad purposes, the shortest line. The curvatures, as reported by the engineer, are greater than the curves on the Cincinnati, Hamilton and Dayton railroad. The grades are much higher. It appears by the official reports of the engineers that the difference in the grades going north, is 310 feet, and going south, 420 feet. It is admitted by practical engineers, that an ascent of 20 feet is equal to one mile of level road. By an equated length of line, made up of lineal distance, grades and curves, the length of the "short line," so called, is 21 94 miles greater than the other, as will be seen by the following extract from the recent report of the Chief Engineer of the Cincinnati, Hamilton and Dayton railroad, which is herewith submitted to public consideration.

Total amount of curvature on "Short Line"	846 $\frac{1}{2}$ deg.
Total amount of curvature on Cincinnati Hamilton and Dayton railroad...	844 "
Total elevation going north on "Short Line".....	671.5 feet
Total elevation going north on Cincinnati Hamilton and Dayton railroad...	361.3 "
Difference in favor of Cincinnati Hamilton and Dayton railroad.....	310.2 "
Total elevation on "Short Line" going south.....	531.5 feet
Total elevation on Cincinnati Hamilton and Dayton railroad.....	110.8 "
Difference in favor of Cincinnati Hamilton and Dayton railroad.....	420.7 "

The "Short Line" has 21 5-10 mile grades of 39 6-10 feet per mile, as against 14 8-10 miles 20 feet grades on Cincinnati Hamilton and Dayton railroad.

By estimating each degree of curvature as equal to four feet additional distance, and every 20 feet of elevation equal to one mile of level road, as is customary in practice, to equalize merits of lines, and the case stands as follows:

EQUATED DISTANCE C. H. & D. R. R. "Short Line."	
Going North	
For curvature.....	.64 miles
" Ascending grades.....	18.06
" Actual length.....	59.80
	78.50
Going South.	86.69
For curvature.....	.64 "
" Ascending grades.....	5.50
Add actual length.....	59.80
	65.94
Difference in favor of Cincinnati Hamilton and Dayton railroad going north	8.19 miles.
Difference in favor of do., going south	13.75 "

The location of the Cincinnati, Hamilton and Dayton road was simply a question of engineering, and the best line between the termini was adopted, as will be seen by the above table. The line was located upon the route selected by the engineers of the company, reference being had briefly to the object of obtaining the shortest and best line.

2. But admitting that the "short line" would be as good a route for a railroad as the one occupied

by the Cincinnati, Hamilton and Dayton road, the next inquiry is, whether the new road, if constructed, would better accommodate the business of the country? If it would not do so, it would probably be admitted that it should not be built.

The Little Miami railroad runs from Springfield to Xenia, and thence down the valley of the Little Miami river to Cincinnati, 85 miles. The Miami canal runs from Dayton down the valley of the great Miami, on the east side of the river to Hamilton, and thence to Cincinnati. The Cincinnati, Hamilton and Dayton railroad runs from Cincinnati to Hamilton, west of the canal, and from Hamilton to Dayton on the west side of the river. Here are already two first class and nearly parallel railroads, averaging less than fifteen miles apart for 60 miles, and a canal between them. It would seem from this statement that the construction of a third railroad, running between these two roads, and alongside of the canal, is not required for the public convenience.

It is true that under the *plunder* law of Ohio two turnpikes were constructed from Dayton to Cincinnati, and two others from Hamilton to Cincinnati. But this was under a law which permitted private and local interest to put its arms, elbow deep, into the public treasury. It was these abuses which snuck nearly two millions of state capital, and rendered the law odious. Individuals without some private or local interest would not so have squandered or misapplied their own funds. Let capitalists who wish to make safe and judicious investments in railroads, beware that they are not misled by mere private interests to make similar mistakes.

Already the competition between the two railroads and the canal has rendered the rate charged for freight, between Cincinnati and Dayton, to almost a nominal price. For several months past, flour has been carried from Dayton to Cincinnati, 60 miles, for eight cents per barrel!

The expense for carrying freight, upon the Cincinnati, Hamilton and Dayton road, will always be less than upon the "short line." The road having the highest grades must be the most expensive road, other things being equal. There is nothing in the comparison between these two routes which can compensate for the great difference in their grades. The comparison in other particulars would be found to be in favor of the Cincinnati, Hamilton and Dayton road.

Passenger trains can always, for the same reason, be run upon the Cincinnati, Hamilton and Dayton road in less time than upon the River valley "short line." The equated distance is less; and the speed of the trains will be much less impeded by running along turnpike roads, through streets, and along the canal work, than they would be on the "short line."

3rd. It may be said that the short line would have the advantage in the location of its depots. This cannot be pretended in regard to the location in Dayton. It is not practicable to get a more convenient and central location than the depot grounds owned by the Cincinnati Hamilton and Dayton railroad company in Dayton.

In Cincinnati the company have depot grounds which cannot be excelled. They are located in the new and growing part of the city, and will soon be in the centre of its population and business, dividing the city by a line running north from the Ohio, and are almost upon the bank of the river just above the reach of the highest flood. They are more convenient for the transhipment of freight

to the river and for the general business of the city than any other location which could be obtained in the city. The depot proposed for the "short line," is I believe more than a mile from the Ohio river, and more than 150 feet above it at the ordinary stage of water.

4th. The investment in the road, if it should be constructed, must be unprofitable. The estimate for building the road is about two millions of dollars. Experience has proved that the estimates for roads are generally far below their actual cost. In this case any person of practical experience, who is acquainted with the character of the work in the proposed line, must be satisfied that the actual cost would be much nearer three millions than two.

It is not probable that the business of the country, with all the through freight and travel from connecting roads, would be sufficient to make the stock or cost of constructing three parallel railroads within the space of fifteen miles, profitable, allowing each to have an equal share of the business, and without taking into account the active competition of the canal. Certainly it cannot reasonably be expected that the "short line," located between the other two, and alongside of the canal, and without feeders from the east or the west, would take more than one third of the freight and travel of the country.

The main feeders of the road already constructed come in from the east and from the west and from the north. The Cincinnati Hamilton and Dayton road will derive a large portion of its business from its western and northwestern connections. The "short line" could not even share in this business, all it could certainly depend on, would be a portion of the local business between Cincinnati and Dayton, and this would be circumscribed within very narrow limits.

5. But if it was practicable to obtain the money by subscriptions of stock, or by selling bonds, or otherwise to build this "short line" road, should it be done? Are there not other roads, even in Ohio, that are much more important for the accommodation of the public, that are not in direct competition with roads already in successful operation, and that promise a more certain and profitable return for the capital invested? To persons acquainted with the lines of railroad now constructing in Ohio, it is not necessary to specify these roads. They may be found in every quarter of the State.

Why should capitalists, and enterprising citizens, who have invested their money in building roads which fully subserve the public convenience and interest, have their investments rendered of little value by the construction of merely rival roads which are not required by the business of the country? If individuals are disposed, not only to make an unprofitable investment of their own money, (though it is generally the fact that some private interest or object influences them,) but to reduce the value of their neighbors prosperity, such schemes as this "short line" road may furnish the means of accomplishing their object.

If it is desirable that the credit of the railroads of the west shall be sustained, and these improvements extended so far as the interest and convenience of the public require, then encouragement should be given to such roads only as are necessary for these purposes; and such enterprises as rest upon mere local competition, or a narrow spirit of local rivalry, or disappointment, should not be encouraged.

Again; the money cannot be raised for this road

in Ohio. The great mass are well accommodated, and well supplied with the roads already in operation. These roads have been located by men directly interested in selecting the best *paying* lines. Such lines have been selected. The interest in favor of new projects is local and sectional. Now, however important such interest may be to *individuals*, they are not to *capitalists*. Such people look only as to the *result*. They consider the question upon its broad merits. They are not going to aid in building purely rival roads; nor will they touch a project that does not promise to yield a large advance upon their investment. The short line must go into the market under all these disadvantages; and from a considerable experience in raising money for railroads, I do not hesitate to state the short line railroad could not borrow money for their work upon any basis that could be raised in Ohio.

These remarks, Mr. Editor, might be applied to more than one of the rival schemes for railroads in Ohio, and perhaps in other States. I regard the principles stated as of general application, though suggested by the case of the proposed "short line" road from Dayton to Cincinnati. PRUDENCE.

A National University for Practical Science.
H. V. POOR, Esq.:

SIR: Under the above head in Appleton's Mechanics' and Engineers' Journal, for May, is an article from the able pen of John A. Roebling, Engineer of Trenton, New Jersey.

Beginning with the announcement of a fact that no one engaged in Scientific Mechanical occupations will dispute, namely that "*the great want of our time is a Polytechnic Institution, or a University for the teaching of Practical and Natural Science,*" he goes on to state, that although the unparalleled advancement of our country is mainly owing to the activity of our mechanics, engineers and miners, yet, while there are institutions in abundance for the education of men of all other professions, medicine, law, theology, etc., with the single exception of the West Point Academy, (which is essentially *military* in its organization,) the scientific student has no where to go to seek that thorough knowledge which alone can fit him rightly to act his part on the great stage of life, in the character he proposes to take. These truths are well known and are to be deplored.

Mr. R. estimates that an institution calculated to accomplish this desirable end, will require from twelve to twenty professors, and that a capital of from \$200,000 to \$300,000 is necessary to establish it on a fair and respectable footing. This amount seems to be about what will be wanted.

Now in comparison to the object in view, it is almost too trifling a sum to be named. Surely when millions and tens of millions of dollars are annually invested through the means of the very talents it is proposed to develop, so small an amount as the interest on \$300,000 (at 6 per cent, \$18,000 per year,) can be spared for this object.

Let the matter then be taken up in a practical manner. Nothing less than hard work will accomplish such an undertaking, and in a very short time the benefits of the institution will be acknowledged by all classes of the community.

If the committee of organization which the article in question refers to, has not yet been formed, let it be so at once. If it is already constituted, let every intelligent person interested in the cause do his utmost to further its objects.

Let a subscription list be opened; solicit friends, let every member of the professions and callings

that are interested, be waited upon for aid, let the General and State Governments be invoked—and undoubtedly the means can be obtained.

The greatest amount of the labor in calling into being such a university, must necessarily devolve upon a few individuals, but I doubt not that there are those of sufficient intelligence and patriotism to be found having the requisite energy, who would be willing to bear their share of it.

I have not the pleasure of knowing Mr. R. personally, but think, perhaps, if he was solicited, he might be induced to take the initiative in some such plan as he has suggested; if so, it might be considered that the project was actually established.

E. W. S.

St. John city, N. B., July 7, 1852.

The Henderson and Nashville, and Edgefield and Kentucky Railroad Companies.

We learn that Gen. W. Barrow, the agent of the latter company, has recently returned from Madisonville, Ky., at which place the former company was organized on the 7th inst. The object of Gen. Barrow's visit was to secure a junction of these two roads—each having a separate charter within the respective states—at the line between Kentucky and Tennessee; and we are happy to understand that this object has been accomplished. Two resolutions upon this subject were unanimously adopted by the board of directors of the Henderson and Nashville company—the *first*, agreeing to unite with the Edgefield and Kentucky company upon mutually advantageous terms: and the *second* appointed a committee to confer with said company as to what those terms shall be. This committee are to visit Nashville, with this view, during the month of July.

From the inquiries we have made, we are satisfied that the road from Henderson to Nashville—made continuous by the recent union—will prove of vast advantage to our city and country. It will pass through inexhaustible beds of excellent coal, not more than 75 or 80 miles distant, which, it is positively asserted by numerous persons well acquainted with the subject, can be delivered at Nashville at from 6 to 8 cents per bushel. Coal at such a price is the only thing needed to make our town a great manufacturing point.

Besides the important consideration of furnishing cheap fuel, this road deserves the attention and countenance of our citizens, from the fact that by means of the various railroads which will terminate at Evansville, Indiana, twelve miles north of Henderson, on the Ohio river, and of the canal leading from the former point to lake Erie, which will be completed by the beginning of next spring, we shall become the great thoroughfare for the trade and travel of the larger portions of the northwest and of other sections of the country, passing to and from the Atlantic ocean, through that important improvement, the Nashville and Chattanooga railroad.

We understand that steps will be speedily taken for the purpose of obtaining subscriptions to stock in the Edgefield and Kentucky company, being the Tennessee portion of the Henderson road.

The following are the names of the directors of the two companies:

Edgefield and Kentucky Company.—Wm. B. A. Ramsey, president; N. Hobson, John Shelby, Samuel R. Anderson, Washington Barrow, A. W. Johnson, P. W. Maxey.

Henderson and Nashville Company.—Hon. Arch'd Dixon, president; A. B. Barrett, James Alves, Jackson McClain, John H. Lambert, E. D. Mc-

Bride, of Henderson county, P. M. Robertson, John L. Woolfolk, of Hopkins county, R. J. Torian, of Christian county, E. G. Sebree, of Todd county.—*Nashville Banner*.

Lake Erie, Wabash and St. Louis Railroad.

We have previously alluded to the convention held at Logansport, Indiana, on the 23d ult., to take the steps preliminary to the organization of the above company. The convention was large, and most respectable in its character, embracing the leading railroad men of the northern part of the State. The greatest unanimity and the best spirit prevailed, giving every assurance of an immediate and vigorous commencement of the work. Below we give the substance of the proceedings of the convention.

The following resolutions were offered by the Hon. A. S. White, President of the Lafayette and Indianapolis railroad, and unanimously adopted.

Resolved, That nature has marked the Wabash valley as the best route of a great commercial thoroughfare (by railroad) from the cities of Boston and New York, to St. Louis. The superiority of this line to any other running south of it, consists principally in the fact that it connects homogeneously with the Lake shore interest in its whole extent, and traverses a country which from point to point is already bound together by intimate commercial and business relations, while it presents from Buffalo to St. Louis as direct a route as any other on the map.

Resolved, That this convention in presenting this route to the consideration of the northern cities and the Lake shore lines on the one hand, and to St. Louis and the citizens of the Mississippi valley on the other hand, deem it advisable for the purpose of an easy connection and free and open competition with the eastern lines, to fix the terminus on the eastern borders of Indiana, at a point which looks with equal directness, both to Toledo and Sandusky, the keys of the two western doors of Lake Erie. That point is the eastern line of Allen or DeKalb county, its precise location to be rendered more certain by further surveys and proposed connexions. The coal deposits of the Vermillion and the Illinois system already established, point to the state line near Danville, as the certain western terminus of its Indiana portion.

Resolved, That it is inexpedient between the Indiana termini aforesaid, to fix any intermediate points, or bind the company to any tract narrower than the Wabash valley, satisfied that in this way alone the best surveys can be secured, and the greatest amount of subscription be raised from the towns and citizens along the line—thus giving to the large amount of capital necessary to be employed in its construction the best guarantees for a secure and profitable investment to capitalists, the free and discretionary application of their means to the purposes for which it is invited.

Resolved, That as this road within the limits of Indiana, will be about two hundred miles in length, it would not be prudent to name the capital requisite for its completion and full equipment on the basis of a first class work, which we alone design it to be, at a less sum than \$4,000,000, at the same time our knowledge of the level and unbroken character of the Wabash plain and of the prairie section, the convenient distribution of lime stone quarries of the best description along its whole Wabash division, and the abundance of oak timber and saw mills in full operation along the line, justify the belief that \$5,000 per mile is a full estimate for graduation, masonry and ties for a single track road with the necessary side track and therefore that one million of dollars with a small margin for contingencies, such as right of way, engineering, etc., will build the road bed ready for the iron.

Resolved, That it would be inexpedient to commence operations upon a less subscription than \$250,000 of unconditional stock, which the friends of the enterprise, irrespective of small local advantages, ought to make up. Subsequent appeals to citizens, towns and corporations whose more immediate final advantages will be manifested by the location of the line, and the value of its connexions

and associations will easily make up another million of subscription, and such a road can safely make a debt equal to its subscription. The Lake Erie, Wabash and St. Louis railroad will find no difficulty, on such a basis in selling her bonds to the amount of the full residue of its capital as above, or to a much larger amount if the business of the road should require it.

Resolved, That it is expedient that a full and thorough survey should be made as soon as practicable, and that the means voluntarily advanced for that purpose shall be reimbursed by the company when fully organized.

Resolved, That we recommend the framing of Articles of Association on the above basis, and that no contract for constructing or other operations on the road except the necessary surveys of the route be made until \$250,000 of solvent subscription shall have been made in the aggregate, such fact to be settled and declared by the Governor of the State of Indiana, for the time being, on proper and satisfactory evidence to be furnished, who is hereby respectfully requested to assume such umpire.

The following articles of association were adopted by the convention, as the basis for the future organization of the company.

ART. 1st. The name and style of the corporation shall be "The Lake Erie, Wabash and St. Louis railroad company."

ART. 2d. The capital stock of the company shall be four millions of dollars to consist of eighty thousand shares of fifty dollars each.

ART. 3d. The eastern terminus of said road shall be a point on the east line of Allen or Dekalb county, in said State of Indiana; thence running down the valleys of the Little Miami and Wabash rivers, and passing through the counties of Dekalb, Whitley, Huntington, Wabash, Miami, Cass, Carroll, Tippecanoe, Fountain, Warren and Vermillion, of as many of them as may be necessary, all in the State of Indiana, on the most eligible route, and terminating at some point on the west line of said State of Indiana, in the general direction of Danville, Ill.

ART. 4th. The length of said road is stated, as near as may be, to be one hundred and ninety miles.

ART. 5th. The number of directors to manage the affairs of the company shall be thirteen.

Books were then opened and stock to the amount of \$50,000 taken on the spot.

Wisconsin.

INTERNAL FACILITIES AND RESOURCES.

The most western link of the great chain of lakes is connected with a prong of the Mississippi, called the Wisconsin river, by a hook—named the "Fox and Wisconsin river Improvement." The Fox river is navigable, and empties its waters into Lake Michigan, through Green Bay—a kind of fungus attachment resembling a jug-handle. This great water communication between the Lakes and Mississippi river extends in a south-western direction from Green Bay, through the interior of the settled regions of the State; and is the only great thoroughfare between the Lakes and Mississippi, north of Illinois. The confluence of the Wisconsin river with the Mississippi is a little below Prairie du Chien, one of the most beautifully romantic, as well as most ancient river towns in the West. This river is navigable for two hundred miles, and, with its tributaries, flows through the most extensive lumber regions in the Union, furnishing the lower Mississippi country with annual supplies of rafts of pine lumber, shingles, etc. Steamers are now plying as regularly between the upper and lower trade on the Wisconsin river as the St. Louis and Galena packets on the Mississippi.

Milwaukee, occupying an eligible position for commerce, is located on the Wisconsin side of Lake Michigan, near the center of the western shore, and is destined to be the custom-house recipient for the heavy products of the north-west, in spite of all rivals. This assertion may be coolly received in some quarters; but when the projected Milwaukee and Mississippi railroad is completed, (40 miles of which are now finished, and sixty miles more under contract) common sense and a glance at the geographical position of the route, must convince any one that our conclusion is anything but chimerical.

This great arterial trunk, extending from Milwaukee through an already densely populated region, will send forth branches in every feasible direction, to gather in and empty into Milwaukee the surplusage of nearly all the country lying north of latitude $42^{\circ} 40'$, including Wisconsin, Minnesota, Northern Iowa, and the new Indian purchase—than which no other regions of the great West can boast of receiving more than half the like emigration during the past year or two, nor will likely for years to come.

Madison, the capital of the State, situated in the interior, and in the focus of a rich and healthy agricultural region, will be the secondary central terminus for plank and railroad ingathering—the cargoes, freight and storage of which will flow into Milwaukee by way of the great trunk, for shipment to New York city.—*Grant County Wisconsin Herald.*

Ships and Ship Building.

The following is the amount of tonnage of the several districts in Maine, as it stood at the date of the last official report, June 30, 1851.

	Total tonnage.	Tonnage built during the year ending June 30,
		1851.
Passamaquoddy	25,349.38	8,496.70
Machias	22,876.88	2,767.44
Frenchman's Bay	34,899.86	2,358.66
Penobscot	40,809.25	2,153.37
Belfast	44,835.22	4,739.68
Bangor	27,571.62	2,576.44
Waldoboro'	103,593.51	17,793.94
Wiscasset	19,718.26	618.64
Bath	103,795.91	18,782.05
Portland	96,571.70	12,309.38
Saco	2,825.88	781.11
Kennebunk	11,204.44	4,020.78
York	1,263.66	
Total	536,315.91	77,398.49

The total tonnage of the United States is 3,772,439.43—increase 236,985.20. Maine stands third of the ship-owning states—and first of the ship-building states. New York owns 1,045,500 tons, but she built during the year but 76,805. In the building of ships Maine is ahead of any other three states.

Cincinnati, Hillsborough and Parkersburg Railroad.

We copy from the Parkersburg Virginia Gazette the following, in reference to this line, the construction of which is gradually progressing, under the extended charter of the Hillsborough and Cincinnati railroad company, whose road is now in operation to a point 58 miles out of Cincinnati, on the direct route to Parkersburg, and is doing very well. The Gazette says:

The surveys, estimates and report of this important section of our through line from Baltimore to St. Louis, are now completed and will be soon submitted in a proper form to the parties interested.

They confirm fully the favorable impressions we have ever entertained, relative to this route.

The distance by the shortest line measured from the *east side* of the Little Kanawha to Cincinnati, when all the cut-offs contemplated are made, will not exceed 174 miles, and the Chief Engineer has it in contemplation soon to abbreviate this *a mile or two*.

This highly favorable result, more than confirms the calculation made last fall in the pamphlet of our railroad company, and which was then considered *quite apocryphal*, by certain parties on the other side of the Ohio.

This result, too, has been achieved with a remarkably favorable system of grades and curves.

Thus, no grade over 39 6-10 feet per mile, will be encountered between this place and Cincinnati, opposing traffic going west—and none over 52, 80-100 (the maximum of our own road) coming eastward.

The curves are of large radii, and the whole route in fact of the first class.

Twenty-five miles of the line are on *a dead level*, one straight line of twelve miles long, and numerous courses of from two to five miles in length.

It is a line upon which the very highest speed known on railways, can be successfully maintained, and it is our opinion that the Engineers have well acquitted themselves of their duty.

From what we can learn, this road appears likely to become the *preferred route* for the extension of the Baltimore line across the State of Ohio. They adopted it, in the map of the late annual report, and we perceive in Mr. Swann's late speech in Baltimore a favorable notice of it.

It is intended to run *coal* into Cincinnati by this route, at a rate so low, as to compete successfully with the Ohio river, and we understand that it has been emphatically pronounced by the Chief Engineer of the Baltimore and Ohio railroad, *the great coal railroad of Cincinnati.*

Tennessee.

A writer in the Nashville Union thus compares the distance on the two routes via Florence and via Lagrange and Holly Springs, to Jackson, Mississippi, there to connect with the New Orleans road.

Upon the *air line* theory, let us now compare the distance of the respective Florence and Clifton routes to Jackson, Mississippi, which city is permanently called for in the charter of the Nashville and New Orleans railroad, starting from Mount Pleasant, the diverging point:

From Mount Pleasant to Florence.....	60 miles.
From Florence to Tuscmibia (river included).....	5 "
From Tuscmibia to Aberdeen (air line).....	85 "
From Aberdeen to Jackson [air line].....	147 "
	297 miles.

From Mount Pleasant to Lagrange, as above stated..... 147 miles.

From Lagrange to Holly Springs..... 30 "

From Holly Springs to Jackson..... 190 "

367 miles.

297 "

Difference in distance..... 70 miles.

—*De Bow's Review.*

Cleveland and Pittsburgh Railroad.

The amount of business on this road is exceeding the expectations of its most sanguine friends. The stock now sells readily at 105 cents, and without doubt will reach a much higher rate than that, when the Wheeling branch is completed. This will be within a year, and perhaps by the first of January next. The company have already declared a dividend of eight per cent for earnings up to the first of January last, and six per cent for the first six months of the present year. The great benefit of the road to the farmer is evinced by the fact that those of us who have to buy provisions, even of the growth of our own townships, are compelled to pay very nearly the New York price, or everything will be hurried away to satisfy the hungry Gothamites. On the other hand our merchants who purchase the farmer's products, are enabled to pay him in goods at a much lower price than heretofore. Whatever may be said to the contrary, railroads in the west benefit the farmer more than any other class of the community.—*Hudson Visitor.*

Maine.

Androscoggin and Kenebec Railroad.—The annual meeting of the Androscoggin and Kenebec railroad company held at Waterville on the 6th inst., called together the largest body of stockholders that has been present at any meeting. The forenoon was occupied in reading the reports of the president, treasurer, and superintendent, and fixing the number of directors to be chosen this year. Seven being the number finally agreed upon.

Messrs. Taylor, Goodenow and Dunn, of the old board of directors, having declined being candidates for re-election, the following gentlemen were chosen directors: Edward Crane, William M. Longley, Nath'l. Ross, Samuel P. Benson,

Henry O. Newhall, Lysander Cutler, and Asher Hinds.—*Portland Advertiser.*

Cincinnati and Chicago Railroad.

We give below a letter from the Hon. S. A. Douglass, United States Senator from Illinois, to the Hon. John Woods, the agent of this company, for the purpose of showing the estimate in which the above project is held by the leading minds of the country.

WASHINGTON, July 8th, 1852.

MY DEAR SIR:—

Accept my thanks for the report of the New-Castle and Richmond railroad, with the accompanying map of the railroads northwest of the Ohio river. I take great interest in your road as a link in the chain which is to connect Cincinnati with Chicago. That the whole chain will soon be completed I cannot doubt, and that it will pay admirably, when completed, cannot be doubted by any one familiar with the country through which it passes. I hope that Congress will not hesitate to give you a grant of land, in aid of this work, equal to the one made to Illinois for the Chicago and Mobile road. But the road must be made, and the stock will be a good investment, whether the grant of land is made or not. Cincinnati and Chicago are destined to be the great cities of the Northwest, and must be connected by railroad. I would not desire any better investment than the stock of this road; and I do not hesitate to assure you, that whatever I can do to promote its success, either in Congress or elsewhere, will be cheerfully done.

I have the honor to be, very truly,

Your obedient servant,

S. A. DOUGLASS.

JOHN WOODS, Esq.

Massachusetts.

Eastern Railroad Company.—The annual meeting of the Eastern railroad company, will be held at Newburyport on Monday next, when the annual report of the directors will be made. We learn that the financial condition of the road is excellent, and that everything has gone on smoothly for the past year.

The number of passengers carried over the road the past year, as we are informed, was one million four thousand nine hundred and ninety one! Not one of this number has received the slightest injury, nor has there happened any accident by which life or limb has been endangered, during the year. This speaks well for the care and skill of those who have control of the management of the road.—*Salem Observer*, 10th.

Ohio Central Railroad.

A few weeks since the board of trade of this city passed a resolution inviting a visit from a committee of the Direction of the Central Ohio railroad company, with a view to the presentation of such details as would place in its proper light the importance of the relations existing between that road and the Baltimore and Ohio railroad—both of which have a common terminus at Wheeling. A committee from the Central Ohio road, consisting of Col. J. H. Sullivan, George James and William Galigher, Esqrs., are now in this city, and it is in contemplation to call, in the course of the present week, a general meeting of the directors and members of the board of trade for the purpose of hearing the interesting exposition which the gentlemen from Ohio will be prepared to make.—*Baltimore Patriot.*

Kentucky.

Covington and Louisville Railroad.—The Covington and Louisville railway company has been duly organized, the stock necessary for that purpose having been taken. The following gentlemen have been chosen directors, viz: Ishmael Henderson and Thomas C. Rowland, of Louisville; J. T. Robinson and Dr. Baxter, of Gallatin; Col. E. T. Berry, of Henry; Col. Sam. B. Steels, of Oldham and Geo. P. Frazer, of Jefferson. Mr. Ishmael Henderson was appointed president. "The great advantages of the route of the road which this

company proposes to build, says the Louisville Courier, have been demonstrated by the report of the engineer which we published recently and from our knowledge of the energetic character of the gentlemen composing the board, we look for speedy and persevering action in this great enterprise.

To Contractors.



PROPOSALS will be received until the 24th of July next, inclusive, at the Engineer Offices of the North Western Virginia Railroad, in Parkersburgh, West Union and Clarksburgh, for the Graduation and Masonry of 50 or 60 sections (of about one mile each) of that road, embracing all the heaviest parts of the work, and containing a number of tunnels, deep cuttings and embankments, as well as a considerable share of Bridge and Culvert Masonry. The line extends from the Baltimore and Ohio Railroad at the mouth of Three Forks Creek, two miles east of Fetterman, to Parkersburgh on the Ohio river, and is about 104 miles in length.

Specifications will be ready at the offices named, and also at Fetterman, on and after the 5th of July proximo, and Engineers will be upon the line to afford information.

The country through which the road passes is healthy, well settled and cultivated, and abundant supplies may be had along the route and from either end of it, by means of the Baltimore and Ohio Railroad, the North Western Turnpike and other good roads, and by the Ohio river. The facilities for cheap execution of the work are unusually great. Hands must be abundant, as the Baltimore and Ohio Railroad is advancing rapidly to completion, and releasing a large amount of labor.

Bidders must bring the best testimonials, and will state what other work they may have on hand.

By order of the President and Directors,

BENJ. H. LATROBE, Chief Engineer.

Railroad Contracts.



THE Mobile and Ohio Railroad Company hereby offer for contract the *Graduation, Masonry and Bridging* of 179 miles more of their road, extending from Section 64 of the last *letting* in Wayne Co. to the south line of Pontotoc Co., Miss.—the latter point being 267 miles from Mobile.

The line will be ready for inspection on and after the first of August next. Also, plans, profiles and specifications will be exhibited, proposals received under seal, and contracts made at the following times and places, to wit:

August 15th—At Quitman, for line in Clarke County.

" 25th—At Lauderdale Springs, for line in Lauderdale and Kemper Counties.

September 5th—At Macon, for line in Noxubee County.

" 15th—At Major Gilmore's, 16th section on "Robinson" Road, for line in Lowndes County.

" 25th—At Doct. Gillespie's, on Aberdeen and Houston Road, for line in Monroe County.

" 30th—At Okolona, for line in Chickasaw County.

From July 25th to August 10th, the profiles can be examined, and other information obtained, of C. B. Child, Esq., Resident Engineer, at Macon, Noxubee Co., Miss.

The grading upon 8 miles of this line is heavy, and good car work. About 35 miles middling heavy, and the remaining 136 miles light.

The high and healthy country in which this line of work is situated, and the proposed *letting* of 250 miles more within twelve months, to complete the road to the Ohio and Tennessee rivers, for which subscriptions are now partly taken up, render this work worthy the attention of contractors both north and south.

JOHN CHILDE,
Chief Engineer and General Agent.
New York, June 14th, 1852.

Norwich Car Manufactory.

FOR SALE.—Will be Sold at Public Auction, on the premises, on Monday, the twenty-third day of August, at 10 o'clock A. M., the entire establishment and property of the Norwich Car Manufactory, consisting of

1 Brick slate roof building, 50 by 150 feet, two stories high, used for setting up cars, cabinet work, &c.

1 Brick slate roof building, 40 by 190 feet, with two wings, 30 by 40 each, one story, used for blacksmith, machine and saw shops.

1 Brick slate roof Engine and Dry House, 30 by 40 feet.

1 Lumber House, 50 by 100 feet.

1 Barn, 18 by 28; 1 Wood Dwelling House, 21 by 28; one and a half stories high.

1 Block of Brick Tenements; several Building Lots.

Together with the Machinery, Tools and Fixtures connected with the same, consisting of a Steam Engine and Boilers; several Planing and Sawing Machines, Turning Lathes, Boring, Punching, Morticing, and a variety of other machines, constituting a complete and extensive establishment for the manufacture of Railroad Cars as any in the country, and capable of working one or two hundred hands, and doing a business of \$200,000 per annum. It is situated on the Norwich and Worcester Railroad, half a mile from the city of Norwich, at the head of navigation on the River Thames—affording the most desirable facilities for the transportation of Cars and materials, and in the immediate vicinity of various and extensive manufacturing and mechanical establishments.

The whole, with the exception of the vacant lots, is leased on favorable terms for four years from February, 1850. For further information, application may be made to

J. G. W. TRUMBULL, Surviving Trustee.
Norwich, June 26, 1852.

6 w

Patent Hose.

DAY & MCMULLEN'S PATENT HOSE.—THE TRIAL made of this incomparable Water Hose, for two years past, has fully demonstrated its superiority. Orders from Railroads, Factories, Water Companies, and others, solicited. Every piece warranted to give satisfaction, by the Patentee and Manufacturer. The following is one of the many certificates, and published, to show the estimation from actual use:—

JERSEY CITY, Dec. 17th, 1851.

HORACE H. DAY, 23 Courtlandt st. N. Y.

DEAR SIR I take great pleasure in stating to you, in answer to your inquiry in regard to the India Rubber Hose furnished by you for the New Jersey Railroad and Transportation Company, that we have found it of the very best description, and to answer much better purpose than either leather or canvas. It is not only more durable, but in the end, the most economical. We have now rubber hose on some of our locomotives, that we purchased of you two years ago, which has been in constant use and is still as good as ever, and I have found your four-ply to stand pressure of 150 lbs. to the square inch.

Yours, very respectfully,
JAMES McFARLAND, Superintendent
Motive Power for N. J. R. R. and Trans.

Suspension Bridge!

STONE MASONRY!

PROPOSALS will be received on the 26th July, 1852, at the Office of the Niagara Falls and International Suspension Bridge Company, for the construction of the Abutments, Towers, Wings, and Approaches, containing 6,000 cubic yards of Masonry, more or less, of the new Railroad Suspension Bridge of 800 feet span, to be erected in place of the present temporary structure, over the Niagara river, one-and-a-half miles below the Falls.

Separate proposals for the Masonry on the East and West shore, including four Towers of 80 and 90 feet high, will be required. The work is under the charge of JOHN A. ROEHLING, Civil Engineer, whose plans and specifications may be examined at the said Office, on the Canada side, on the 23rd and 24th of next month.

DAVID SMITH,
Superintendent,
Office, Suspension Bridge, {
June 28, 1852.

TRUSTEE'S SALE
Of the Property, Personal and Real, of the
Maryland Mining Company,
In ALLEGHANY COUNTY, MARYLAND.

By virtue of a decree passed by the Circuit Court for Alleghany county, as a Court of Equity, the undersigned, Trustees, will sell at public sale, at the Eckhart Mines of the Maryland Mining Company, **ON THE FIRST DAY OF SEPTEMBER, 1852,**
At Twelve o'clock, Noon.

All that Valuable Mineral Estate belonging to the Maryland Mining Co., and which said company has been improving for the last seven years, by the expenditure of a vast amount of capital.

The Real Estate consists of two Tracts of Land, called "THE MARYLAND MINING CO." and "FOUNTAIN INN," located in one body, containing about

1900 Acres of Land,

a large part of which is underlaid by the

GREAT VEIN OF COAL,
14 feet in thickness, likewise by many other veins, varying in thickness from 2 to 4 feet, the whole located in the very heart of the Great Semi-bituminous Coal Fields of Maryland.

Also—Two other Lots or Parcels of Land, containing 50 acres each, known as LOTS NOS. 3970 and 3972; these Lots are heavily timbered, and are said to be underlaid by the GREAT VEIN, or 14 feet vein of coal.

Also—Lots Nos. 3401, 3402 and 3403, containing 50 acres each, and adjoining the tract called "Maryland Mining Company," and underlaid with the great vein of coal.

Also—One Lot called "HOOK-IM IN," containing about 80 acres, situated on Braddock's Run, two miles below the village of Eckhart. This land is heavily timbered, with timber suitable for RAILROAD CROSS TIES and other purposes. Braddock's Run affords many excellent sites for Saw or other Mills on this property.

Also—Two Lots of Land on the Canal Basin and Potomac River, containing 19½ acres of land, being part of the bottom land of the ROSE HILL ESTATE, purchased by the Maryland Mining Company for a COAL DEPOT, and most eligibly situated for the purpose, and particularly described in a deed from Mary Lynn and others to the Maryland Mining Co., dated 19th of January and 2d February 1844, and recorded in Liber H. B. No. 1, folio 140. Each tract being on the slack-water navigation of the Potomac River. The Baltimore and Ohio Railroad passes through the whole length of both tracts.

Also—A Tract or Parcel of Land situated at the junction of Braddock's Run and Wills' Creek, containing about five acres, conveyed to the Maryland Mining Company by Joseph Dilley and Elizabeth his wife, by deed bearing date the 18th of February, 1841, and recorded in Liber A. B. No. C. C. folios 29, 30, 31 and 32.

The two first Tracts of Land are divided into desirable FARMS, well watered and eligibly situated, and are in a high state of cultivation. The soil is good, and there is an immediate and certain market on the property in supplying the laboring population at the works with the products of the farm.

THE VILLAGE OF ECKHART MINES contains about 100 BUILDINGS of Wood, Brick and Stone, among them 1 Store house, 70 Dwellings, Machine Shop, Locomotive and Stationary Engine Houses, Carpenter Shops, Blacksmith do., Stables, Barns, etc., etc., all new and in the best repair. The village is situated near the centre of the property on the National Road, one and a half miles east of Frostburg; it is immediately convenient to the entrance of the Mines and affords accommodations to a population of 7 or 800 souls.

The Coal Mines are opened to be worked both by horizontal and slope workings, to an extent sufficient to meet the necessities of the largest coal trade. Besides the Eckhart Mines already opened, the Hoffman and other openings upon the property are eligibly situated to furnish vast amounts of coal on a very moderate outlay for improvements being made.

Also—A RAILROAD 9½ miles in length, from the Mines to a junction with the Mt. Savage Railroad by which a continuous line of transportation is provided to the Baltimore and Ohio Railroad Depot, in the town of Cumberland, and by a branch Railroad to the Chesapeake and Ohio canal. The road is laid partly on cross ties with a rail weighing 62 lbs. per linear yard, and partly with an edge rail weighing 33 lbs. per yard supported by string timbers and cross ties, the whole in good repair, and constant transportation passing over it, together with full and ample right of

way for the same acquired by condemnation and purchase.

Also—A Branch Railroad from the Mt. Savage Railroad about one mile in length to the property of the Cumberland Basin company in the town of Cumberland, said road being new and in the best order, laid with a heavy rail of 62 lbs. per yard and large oak cross ties. The two roads above mentioned of the aggregate length of 9½ miles costing over \$250,000.

Also—A vast amount of personal property, for railroad and mine equipment, too numerous to mention in detail, but consisting in part of the following articles: 2 first class coal burning LOCOMOTIVE ENGINES, (Winans' make) weighing 23 tons each; 1 second class wood and coal burning do, (English make and American rebuild,) and weighing 15 tons; 1 second class, do, do, 12 tons; 30 iron coal cars; 11 Gondola coal cars; 5 coke cars; 14 platform lumber cars; 2 passenger cars; 170 mine cars for the mines; 1 superior turning lathe and other machinery, tools and implements for repairing engines and cars. Also, Horses, Carts, Oxen, Wagon and Farming Utensils, etc., etc., etc.

The revenues of the Railroad growing out of the transportation of coal and miscellaneous freight and from passengers, are more than enough to pay the interest on its cost and keep it in repair.

It is not possible in an advertisement of this kind to give a full description of the property in question, but the object of the undersigned will be effected if they shall be able by this means to call the attention of capitalists to this magnificent property, which contains within itself all the elements necessary to sustain a large mining and manufacturing business, villages erected for workmen, collieries open ready for working—Railroad and Canal communication with tide water, etc.

THE TERMS OF SALE as prescribed by the decree are, one fourth of the purchase money in cash on the day of sale, and the balance in three equal installments of six twelve and eighteen months, with interest from the day of sale, the purchaser giving his notes or bonds with security to be approved by the Trustees, or the whole purchase money may be paid in cash at the option of the purchaser.

For further information apply to M. O. Davidson, Engineer and Superintendent, at the Mines, who will exhibit the property and explain its capabilities, or the undersigned Trustees,

GEORGE WM. BROWN,
Baltimore.

WILLIAM PRICE,
GEORGE A. PEARRE,
THOMAS J. McKAIG,
Cumberland, Trustees.

Notice is hereby given, pursuant to said decree, to the creditors of the Maryland Mining Company to file their claims with the vouchers thereof in the office of the Clerk of the Circuit Court for Alleghany county, within two months from the day of sale.

GEORGE WM. BROWN,
WILLIAM PRICE,
GE. RGE A. PEARRE,
THOMAS J. McKAIG,
Trustees.

July 3, 1852.

Railroad Spikes.

WE would call the attention of Railroad Companies and Contractors to a superior article of Railroad Spikes, of our own manufacture, which for finish, durability and quality of Iron, are not equalled by any in the United States.

THACHER & SEARS,
79 State st., Boston.

N.B.—T. & S. are prepared to take contracts for the delivery of Spikes, at any port of the U. States.

To Contractors.


SEALED PROPOSALS will be received at the Office of the Secretary of the Lake Ontario, Auburn and New York railroad company, at Auburn, until the 20th July instant, for the grading and masonry of the said railroad. The length of the line is 73 miles. It will be divided into sections by the engineer, as may be seen in the schedule of specifications to be exhibited before the 10th inst. Proposals may be made for the whole or separate sections of the line.

Bids offering to accept stock in the company as part payment will be preferred, although bids on condition of cash payment exclusively will be favorably considered.

THOMAS Y. HOW, Jr., Pres't.
B. F. HALL, Secretary.

Nashua Iron Co.,

NASHUA, NEW HAMPSHIRE.

MANUFACTURERS of Bowline, Pembroke and Lowmoor Locomotive Tires, Engine Frames, Crank and Car Axles, Wrought Iron Shafting of all sizes, Shapes of all descriptions used in Machine shops and upon Railways.

FRANKLIN MONROE, Treasurer.

Messrs. Fullerton & Raymond, Agents, Boston.
Raymond & Fullerton, " New York
Orders received by the Treasurer at Nashua, N.H.
or by the Agents in Boston or New York.

RAIL ROAD CAR FINDINGS,

BRIDGES & BROTHER,
64 Courtland Street, N. Y.

WHEELS AND AXLES,
JAWS, BOXES, AND CASTINGS FITTED.

WROUGHT NUTS, BOLTS AND WASHERS,

ENGINE AND CAR SCREW BOLTS, all SIZES,

COACH LAG AND TELEGRAPH SCREWS,

LOCOMOTIVE ENGINE LANTERNS,

From the BEST Manufacturers and at their Prices.

CAR, HAND and SIGNAL LANTERNS.

COTTON DUCK, FOR CAR COVERING,

of any required width to 124 inches.

ENAMELED HEAD LININGS,

The best article made in this country.

PLUSH, and CURLED HAIR.

HAND CARS AND BAGGAGE BARROWS.

PASSENGER, FREIGHT-CAR, AND SWITCH

LOCKS, DOOR KNOBS AND BUTTS.

BRASS and IRON WOOD SCREWS.

BRASS AND SILVER PLATED TRIMMINGS

For Windows and Seats.

VARNISH, COACH JAPAN, AND GLUE,

Paints, Varnish and Glue Brushes.

SILVER PLATED AND WHITE METAL LETTERS.

ENGINE and SIGNAL BELLS.

ANTI-FRICTION, OR BABBITT METAL.

PORTABLE FORGES & JACK SCREWS.

HEMP PACKING, AMERICAN, RUSSIA AND ITALIAN.

CONDUCTOR'S BADGES AND BAGGAGE CHECKS.

Iron Bronzed and Brass Hat Hooks.

VENTILATORS AND WHITE METAL RINGS,

And all other Articles pertaining to Cars.

ALBERT BRIDGES. { Late Davenport & Bridges, Car Manufacturers, Cambridgeport, Mass.

ALFRED BRIDGES. { Late Davenport, Bridges & Co., Fitchburg, Mass.

To Contractors.

SEALED PROPOSALS will be received at the office of the Engineer in Syracuse, until the 20th day of July next, for the Grading, Masonry, and Bridging of the Syracuse and Binghamton Railroad. Length of line 76 miles. Separate proposals may be made for the bridging in conformity to plans exhibited at the office of the engineer. The work to be let will be divided into sections of about one mile in length, a large portion of which will be well worth the attention of contractors.

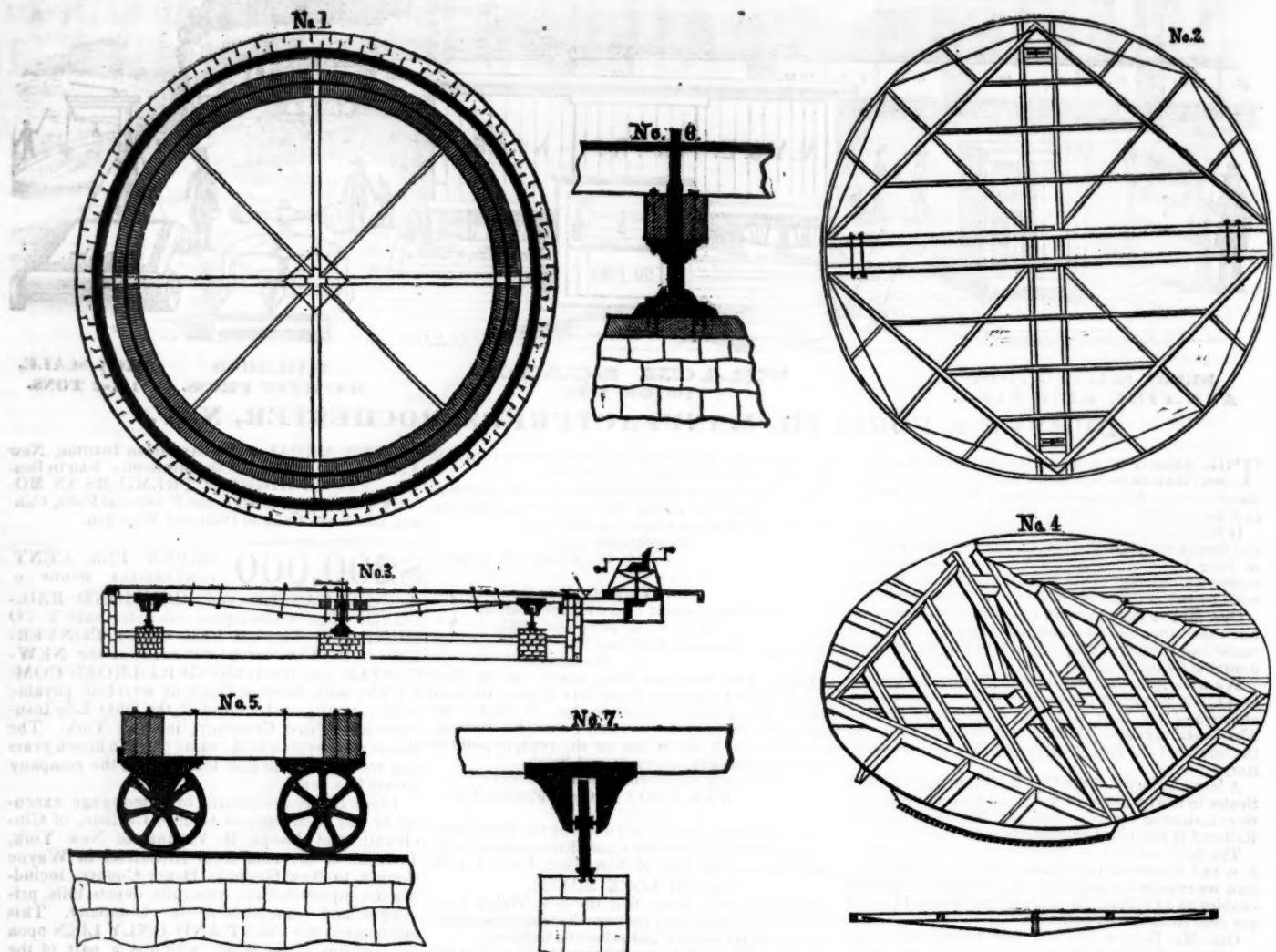
Bids proposing to receive a portion of pay in the stock of the road would be preferred, but such preference will not exclude the favorable consideration of bids for cash payments wholly.

Proposals may be made for the whole line, or for distinct sections.

The line will be prepared for examination on the 10th day of July. Plans, Profiles, and Specifications, and all necessary information will be furnished at the office of the Engineer in the city of Syracuse.

HENRY STEPHENS, President.
June 2, 1852.

CARHART'S IMPROVED TURNTABLE.



THE Patentee of the improved Turntable solicits an examination of its merits by Railroad Companies. It has been in use on the Hudson River Railroad during the last three years, since which some improvements have been made upon it. The Patentee is now putting down the fifth table on the Ohio and Pennsylvania Railroad, where these tables have been in use for one year past. The chief merits of this Turntable are that it is capable of being turned by two men, with an engine and tender upon it, weighing thirty-five tons, in the space of two minutes. Its cost, including all material, the best kind of workmanship in wood, iron and ma-

sonry—except excavating the pit and laying the track—is only thirteen hundred dollars, and all repairs, except the ordinary wear and tear, will be guaranteed for the sum of five dollars a year, for three years.

Figure 1 of the above cut represents the foundation, consisting of the bank and track walls; centre pier, cross-timber for bolting the step of pivot to. The track, which is spiked and leaded into the coping of the wall, the latter being composed of stone $2\frac{1}{2}$ feet square. The Bank wall is 5 feet high and 20 inches thick, with cut and hammered dressed stone coping laid in lime and sand. Fig. 2 shows the

carcass framing. Fig. 3 gives a side view of one main truss, with the mode of gearing, including screw for pivot, 6 inches in diameter, running to the top of the table, with the lever for adjustment. Fig. 4 gives a perspective view of rim and segments. Fig. 5 an end view of the main trucks with pedestals and wheels. Fig. 6 a screw for pivot, 6 inches in diameter, running to the top of the table, with the lever for adjustment. Fig. 7 shows the cross section of the track wall, wheel and pedestal.

For further particulars please address the subscriber through WM. W. PRATT, Jersey City, N. J.

June 19th.

D. H. CARHART.

New York and Canada.

The attention of Merchants, Traders and travellers, is directed to the facilities now afforded for the conveyance of freight and passengers direct from this city to Montreal.

The Champlain and St. Lawrence Railroad Company having opened their road from Rouse's Point to South Montreal, the only link before wanting to connect New York with Montreal by a continuous railroad, has been supplied.

Passengers leaving New York in the morning, sleep comfortably on the way, and arrive at Montreal at half-past four the following afternoon, reducing the travelling time to little more than twenty hours. Freights are carried with the greatest care and dispatch, at greatly reduced rates.

After the opening of navigation, passengers will be conveyed from one city to the other by day light.

New York, Feb. 13, 1852.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Telegraph Companies.
TELEGRAPH WIRE.

ORDERS taken for all numbers of best quality of English Telegraph Wire. Samples at the office of the Subscribers. JEE, CARMER & CO., 6m*14 75 Broad st., New York.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6, 1850.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement)
Memphis, Tenn.